COMING FEATURES

(dates are tentative)

GENERAL

Microscopic Fiber Study....Jan. 9
Designing Narrow Fabrics..Jan. 16
Annual Review and Forecast..Feb. 6

COTTON

Warping for Satisfactory Slashing and Weaving.....Jan. 23
Marquisette Weaves .....Jan. 30
Yarn Defects .....Feb. 13

WOOL

Quality in Tops.....Jan. 16
Carpet Design .....Jan. 23
Seasonable Fabrics.....Feb. 13

SILK

Throwster's Clearance .....Jan. 9
Loom Shipping and Driving Adjustments .....Jan. 30
Adjusting Lay Motion.....Mar. 5

RAYON

Strength of Acetate.....Jan. 9
Processing Rayon Fabrics..Feb. 13

KNITTING

Modern Outerwear and Underwear Equipment ....Jan. 9
Full-Fashioned Costs.....Jan. 16
Design and Figure Knitting on Circular Machines.....Feb. 13

PROCESSING

Testing Dye Substantivity..Jan. 16
Increasing Dye Penetration..Jan. 23
Job Standardization in Bleachery .....Jan. 30

ENGINEERING

Electrical Review .....Jan. 16
Preventing Vibration .....Feb. 13
Unit Heaters .....Mar. 5

Textile World

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Textile World

ESTABLISHED 1868

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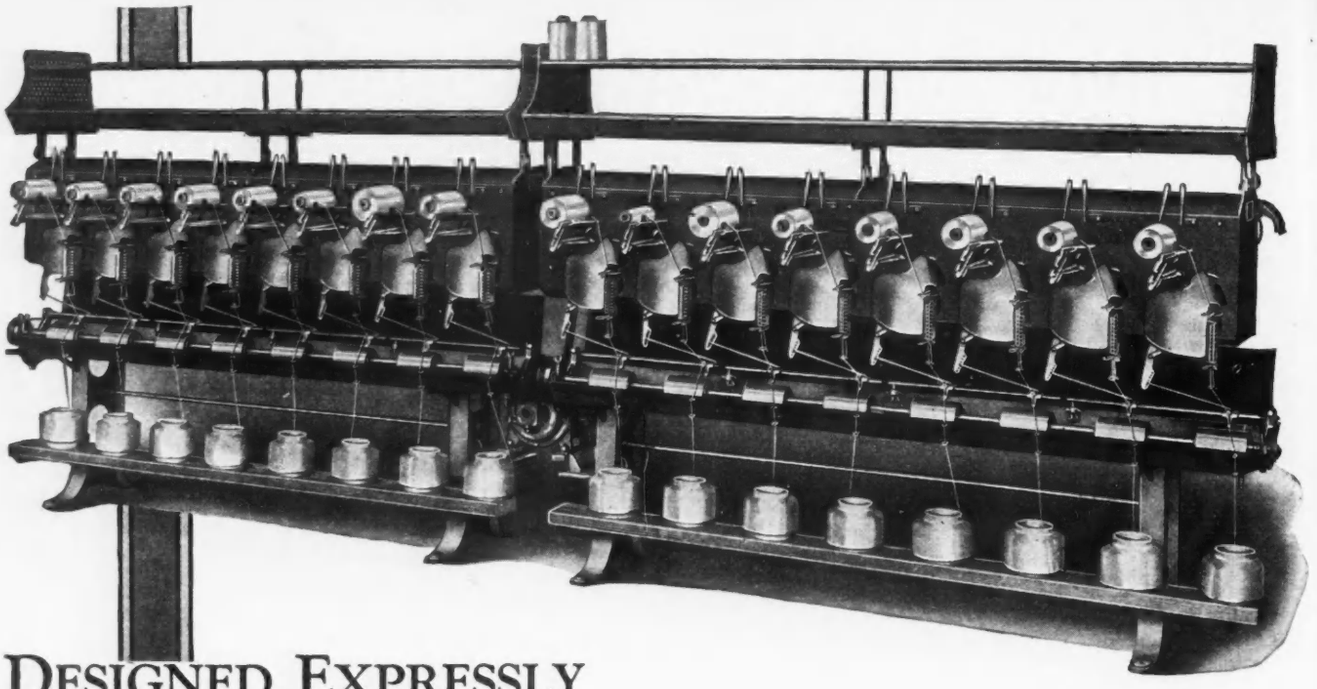

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UNIVERSAL WINDERS

January 2, 1932

Textile World

Vol. LXXXI, No. 1

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Editor: Douglas G. Woolf

Textile World's *Annual Editorial Inventory*

THE year 1931 was a thoroughly unsatisfactory one in textiles.

It is possible to gloss this statement with a reference to certain constructive accomplishments — and in fact these will be recorded elsewhere in this inventory. So far as the average individual manufacturer is concerned, however, the unadorned statement of fact represents a true picture and should be faced.

Nor can any real satisfaction be secured from the thought that 1931 was a year of grief for the world at large.

First, it must be remembered that the textile depression does not date from the 1929 stock market crash. The troubles of this industry began with the post-war deflation; their elimination depends upon correction of evils existent at that time, and not upon the passing of the present economic emergency.

Second, initial steps had been taken to effect such correction, but these steps have not been properly capitalized by the industry.

Third, textiles enjoyed during 1931 a higher rate of demand than fell to the lot of most other industries. The benefit which might have been expected to accrue from this situation did not materialize.

If the turn of the year could be counted on to bring a "new deal" automatically to the industry, these facts of history could be ignored. But there is no such "new deal" in sight. Any textile manufacturer who could not win in 1931 cannot hope to win in 1932—unless, of course, he plays a different sort of game.

Marked increase in volume of textile sales in not "in the cards" for the next 12 months. In fact, it is not at all improbable that the total may be lower rather than higher. Immediately urgent replacement needs for textiles have been filled; placing of further orders depends upon the purchasing power of the individual consumer. The general business situation has got to improve radically before any sustained demand for textiles can be expected.

Consequently mills are confronted, not with the problem of how much profit they can make this year on a larger volume of business, but rather with the problem of how they can make a profit if the volume is at least no larger than last year's.

These are unpleasant thoughts but, once again, they must be faced.

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TO a large extent, the solution of the problem depends upon the individual.

It is superfluous for us to re-state our belief in the coordinated effort in which the industry has engaged during recent years.

The type of thinking which lead to the inauguration of the various cooperative programs is as sound today as it was at their inception. Prosecution of those programs is more, rather than less, necessary. Never before has it been so evident that, in a demoralized market, no one can prosper.

However, we must also re-state our recognition of the boundary lines of cooperative effort. We have not reached, nor are we striving for, a socialistic state where all may reap an equal return. We are merely trying to create a fundamentally sound situation where there is an ample reward for individual initiative and intelligence, and a corresponding penalty for individual inertia and stupidity.

Consequently, no matter how sound the statistical position of an industry may be, it yields no progress so long as individuals pursue such unintelligent merchandising and production policies as have dominated the textile markets during the last year.

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NOTHING we have said thus far should be allowed to detract from the credit due to many organizations and individuals for the progress made in several directions in 1931; progress which, if permitted, might have produced at least a partial financial return.

In fact, as we took our inventory last week, we were again impressed by the extent of that progress. Rebuilding an industry is a slow job; educational effort takes years, not months. Consequently each step in advance must be hailed with satisfaction —and guarded jealously.

Here is a brief summary of such trends in 1931:

Merchandising: The successful conduct of National Cotton Week and National Wool Week represented a new achievement in progressive cooperative promotion..... Launching of the Textile Foundation's studies in textile marketing, including the appointment of advisory committees and research directors in both cotton goods and wool goods, promises much for the future. Of similar potential import are the surveys planned by the Silk Association of America and the National Knitted Outerwear Association, in their respective fields..... The decision of a fabric manufacturer to extend its activities into the garment field, and that of an apparel concern to weave its own goods, are significant of trends toward vertical integration which have a bearing on the merchandising picture of the future.

Employment Policies: Successful inauguration, on March 1, of the movement to eliminate night employment of women and minors in cotton mills marked a revolutionary step in coordinated textile activity..... Suggestion of a uniform minimum wage advanced by a worsted manufacturer, while producing no direct effect, reflected a new type of thinking.....Peculiar agreement between union and manufacturers, providing for radical wage-cuts in full-fashioned hosiery field with the implied intention of forcing the unionization of all mills, was at least a dynamic move, no matter what one may think of the method of approach..... With the exception of strikes engineered by communistic groups for purposes other than aiding the workers, the labor disorders of 1931 were marked, in our opinion, by a greater mutual attempt to understand the problems of the other side than has been true in the past.

Balancing Production with Demand: Despite unfortunate developments in the last two months of the year, cotton goods manufacturers maintained a sound statistical position during most of 1931.....Entrance of converters into the picture was significant .....Attempts of Silk Association of America and of National Association of Hosiery

and Underwear Manufacturers, to educate members in this direction, bore fruit.

Mergers: Consolidation of a large group of combed yarn mills in the South, and merger of important factoring interests in New York, represented two concrete moves toward centralization of control.

Costs: Publication of material on method for predetermining yarn costs in cotton mills, and actual installation of cost systems in individual mills by Cotton-Textile Institute, reflected further progress in at least this one division of the industry.

Technical Research: U. S. Institute for Textile Research continued its formative plans; completed its research survey for the Textile Foundation; and announced its determination to compile an annual study of research progress.....Textile Foundation laid plans for fellowships for research men.

Machinery Developments: New and potentially revolutionary events included the announcement of a machine to knit full-fashioned hosiery in one operation; production of a non-woven pile fabric, called the first "synthetic fabric"; and development of an interesting continuous process of rayon manufacture.

Trade Practice: Helpful, but far too few, moves toward correcting trade abuses included formation of the Design Protection Association to fight piracy of designs; activities of Associated Knit Underwear Manufacturers of America toward spiking false rumors of price-cuts; adoption of tentative specifications for labeling "part wool" blankets; and belated price advances made by silk dyeing firms at end of year, after months of suicidal price-cutting in the industry.

★

WHAT about 1932?

We have indicated that there must be a "follow through" on each of the constructive activities now under way. There can be no weakening, for example, in the attempts to keep production in line with demand. There can be no retraction, on the part of the cotton industry, from its stand on the elimination of night work for women and minors. There can be no tendency toward inaction on any of the other points cited above.

In fact, the industry has ahead of it many other fundamental jobs which it should undertake. Many of those started thus far are only partial measures; many are merely palliatives.

But, frankly, we do not believe 1932 will be an appropriate year for the inauguration of such further steps. It is difficult to conquer one's impatience, one's desire for action —but it is first necessary to assimilate what has been done to date.

We know of no single broad movement which is immediately practicable and which, at the same time, will in itself guarantee prosperity to the industry.

However, we feel that each manufacturer has two jobs to do this year. First, he must continue to support every constructive undertaking thus far devised to remedy the status of his industry. He can do this best by participating particularly in the work of the small group with which he is identified since this is the most effective type of effort with which to meet the peculiar exigencies of the moment.

Second, he must put his house in order so that he can make a profit.

To the latter end, attention to his merchandising methods is of primary consideration. By now, it should be realized that each instance of price-cutting merely sets up another target for competitive bidding. A manufacturer or an industry which continues to sell its product at a loss over a period of time has no economic justification for existence. The answer, of course, is that

no orders which do not show a profit should be taken; it is more profitable not to make goods at all than to make them at a loss.

Coupled with faulty price policies are abuses of trade practice which are almost too numerous to mention. It has been suggested that an appropriate line of endeavor for the product groups within the various organizations of the industry would be honest evaluation of such practices and attempts to correct them. This is not only theoretically practical but has been done effectively in other industries. It is believed the associations and institutes would be glad to encourage such action. However, nothing can be accomplished without individual observance.

New initiative must be directed toward development of new products. Many firms have changed their entire financial picture by such effort but there are still too many who are selling a product which they have been manufacturing traditionally, and the market for which may have dwindled or practically passed. Even firms manufacturing staple gray goods, with apparently inflexible outlets, will be surprised at the extent to which product development is possible.

Attempts must be made to get closer to the market; to know its trends and its demands—and to shape the production program thereby.

Manufacturers who find their existing set-ups uneconomic must consider the possibility of sound mergers—and submerge personal jealousies in the attempt to effect such combinations.

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NOT one of these is a new thought. But each will be more vital in the 1932 competition than probably ever before.

The lesson of 1931 has been a hard one. The extent to which it has been learned will determine the course of 1932.

Douglas G. Woolf

Editor.

TEXTILE WORLD is a consolidation of *Textile World Record* and *Textile Manufacturers Journal*, effected in 1915.

Textile World Record was the paper resulting from the merger, in 1903 of *Textile World* and *Textile Record*. The former was founded in 1888 by Walter B. Guild and Henry G. Lord. In 1895 it absorbed *Industrial Record*, formerly *Manufacturers Review and Industrial Record*, which was started in Boston in 1868. *Textile Record* was founded in 1880 in Philadelphia by Charles Heber Clark and Frank L. Nagle.

Textile Manufacturers Journal was founded in New York in 1894 by Joseph H. Bragdon. The merger of *Textile World Record* and *Textile Manufacturers Journal* in 1915 resulted in the formation of Bragdon, Lord & Nagle Co., Inc., and publication of *Textile World Journal*, later shortened to TEXTILE WORLD.

In 1923 *Posselt's Textile Journal* was absorbed by TEXTILE WORLD; and in 1924 *Textiles* was also absorbed.

In 1928, TEXTILE WORLD became affiliated with the McGraw-Hill Publishing Co.

The editorial staff of TEXTILE WORLD consists of: Douglas G. Woolf, editor; William B. Dall, managing editor; Edwin D. Fowle, associate editor; John Black and Winn W. Chase, assistant editors; Ralph C. Maultsby, southern editor; James A. Austin, New England editor; Charles W. Fisher, Philadelphia editor; Elmer Loemker, art director; Richard W. Rawlinson and L. Alderman, editorial assistants.

NOTE: The above historical summary is published semi-annually for purposes of record.

Hardy Trends *for 1932* Sown in Stony Soil *of 1931*

IN the stony soil of American business in 1931 were planted seeds of certain hardy trends which should sprout in 1932. Individual and collective planning, plus intense application to the problem that deflation has brought, has laid the foundation for the coming year. Business in 1932 will proceed with caution but not without faith, in the opinion of 135 editors of business papers, expressed in the ninth semi-annual survey of the business outlook, released by the National Conference of Business Paper Editors and the Associated Business Papers.

Potentially important trends noted by these editors include new products in practically all fields, spontaneous efforts to correct reckless price-cutting, cooperative educational campaigns by trade associations, further attempts to lower production costs, added efforts toward intelligent balancing of production and demand, and extension of hand-to-mouth buying from the merchandising fields to general industry.

Through all the reports of the individual editors there ran the warning that business had gone too far in its attempts to meet conditions towards debasement of product and ruthless price-cutting and that, during the next year, it had to get back to a basis whereby a fair price could be secured for a fair product or service. In no other way, the editors feel, can prosperity be restored to capital, labor and the consuming public.

In some fields these editors hold that the depreciation of raw materials and finished products is over. In fact, some price advances were reported late in the year. A swing away from sub-standard goods made to sell at low prices, regardless of quality of materials used, is noted in the merchandising fields, particularly with department stores.

A few of the specific comments by business paper editors regarding prospects and conditions in the fields of their individual papers are as follows:

Samuel O. Dunn, editor, *Railway Age:* "The year 1931 has been the worst for our railways in history. The net operating income earned by them and also the number of their employees have declined to the lowest levels within thirty years. The prospects in the railroad field for 1932 are much better. The Interstate Commerce Commission has granted an advance in rates which it is estimated will produce about $100,000,000 in revenues and apparently railway labor organizations will agree to a 10% reduction of wages, which will save the railways about $215,000,000."

F. E. Schmitt, editor, *Engineering News-Record:* "In the construction field there is occasion for a most hopeful outlook, because of a fairly well maintained volume of public works, despite a heavy decrease in local public works due to tax collection delinquencies, pressure for tax reduction, and unwillingness to authorize bond issues. Federal and state public works promise to exceed their normal volume."

Earl L. Shaner, editor, *Steel:* "With production in 1931 averaging only 37% of capacity, American steel producers are struggling hard to put their house in order. They are effecting surprising economies. A few have learned how to stop a blast furnace for a few days—a feat unheard of prior to 1930. Open-hearth superintendents are introducing large savings through automatic control. Reduction in cost is the watchword all along the line."

Norman G. Shidle, directing editor, Chilton Class Journal Co.: "The automotive industry is bringing to the public in 1932 more definitely new products and distinctly new models than at any previous time in the last five years. Engineering development has been marked during the last 12 months and the results of this development are being incorporated in the 1932 products of practically every automotive manufacturer."

Ralph Busbey, editor, *India Rubber & Tire Review:* "The rubber and tire industry during 1931 kept production in better balance with demand, reduced inventories materially, engaged in the most bitter merchandising competition in its history, reduced prices without justification and to the serious detriment of all companies, and reduced its operating forces considerably. Total sales were considerably under 1930. The prospects for 1932 are much better. Replacement tire sales alone should gain 4,000,000 units in 1932 over 1931."

Sidney D. Kirkpatrick, editor, *Chemical & Metallurgical Engineering:* "Having paid dearly for the lessons taught it last year by the disastrous price wars in the alkali and alcohol trades, chemical industry enters 1932 with a firm determination to live and let live. Almost without exception, contracts for these commodities show some increase over last year although the general level of prices is not out of line with that in other industries."

Douglas G. Woolf, editor, TEXTILE WORLD: "If profits had been as plentiful in the textile industry in 1931 as were new trends, manufacturers would have enjoyed unprecedented prosperity. Producers of both equipment and fabrics experimented with new lines. Just as a few examples, there were introduced a machine for producing full-fashioned hosiery in one operation; a process for manufacturing a non-woven floor covering with a pile surface like a Wilton carpet; and a new continuous process of making rayon. Collective efforts to balance production with demand are best exemplified by the cotton goods branch which, for the first 10 months of the year, sold 7% more yardage than it made. New emphasis on the merchandising factor was reflected in such nation-wide programs as National Cotton Week in June and National Wool Week in November; in improved styling and packaging of many textile products; and in further integration of fabric and clothing manufacture. Textile mill managements resorted more freely to a "dose of salts" in an attempt to shrink top-heavy organizations to a size compatible with current volume of demand. Among new employment policies was the elimination of night employment of women and minors in cotton mills which went into effect March 1st and has been observed by approximately 85% of the industry. The only phase into which novelty was not injected was price-cutting. Manufacturers continued to try to force their goods at levels below cost. If a little common sense on this point is added to extension of the other progressive moves, 1932 shouldn't be so bad."

The Week in Textiles

as Reflected in This Issue

General

TEXTILE WORLD's Inventory

TEXTILE WORLD's Annual Editorial Inventory sums up the progress of the year in the textile industry and presents the objectives of the immediate future. *(page 13)*

Opinions of Editors

Opinions of business paper editors on conditions and prospects of their respective fields are given where these fields impinge on textiles. The symposium forms additional material for formulation of ideas on the year now commencing. *(page 17)*

Filing Patent Application

Filing the application for a patent is considered in the current installment of "Pointers on Patents." *(page 24)*

Serigraph Test on Woven Fabrics

A modification of the serigraph method of breaking a number of parallel strands at the same time has been found to give satisfactory results as a test of yarns in the woven fabric. The method of preparing the samples and of making the tests for both plain and pile fabrics are described. *(page 25)*

Year's Electrical Developments

The year's electrical progress as it affects the textile industry is reviewed. Probably one of the most interesting developments in this respect is that of the so-called self-cleaning motor. *(page 31)*

British Textile Show

Plans for featuring textiles in the forthcoming Industrial Exposition in London, England, are given. The textile end of this exposition will be handled as a separate unit. *(page 35)*

Crinkles in Damask

Two orders of sateen weaves are combined in order to produce a crinkled effect on damask. The principle is based upon controlled weave contraction. *(page 42)*

Cotton

Mechanical Accidents

The fact that mechanical accidents in cotton mills are almost twice as numerous as in other industries is something to think about. The number of days out is excessive, production is impaired, and costs rise. The high mechanical exposure found in this industry is said to be largely responsible. *(page 30)*

Artificial Position of Cotton

The fact that raw cotton is being held in an artificial and weak position is the basis of Dr. Haney's uncertainty as to its future stability, according to his statement in this week's TEXTILE WORLD Analyst. "While awaiting the outcome of plans to inflate bank credit," he writes, "the cotton market is temporarily supported by southern holding. The situation is so artificial that we do not care to hazard a forecast. The fundamentals, however, are weak." *(page 45)*

Cotton Steady

Cotton has come to the end of the year without further serious break and with fair stability due to absence of selling pressure in the South. There is, however, little evidence of support and traders are waiting. *(page 49)*

Yarn Sellers Hopeful

Low stocks of cotton yarns and scattered inquiry for immediate deliveries are regarded in yarn circles as the most hopeful signs to be found at the close of the old year. The market was dull although deliveries on old contracts made December a fairly heavy month for invoices. *(page 49)*

Goods Market Dull

The week between the holidays brought no change of consequence to cotton goods. Both buyers and sellers have been watching the effects of extensive curtailment during the last part of December. Every effort toward stabilization is being made by most factors. *(page 53)*

Wool

Worsted Spindle Survey

Another report growing out of the University of Pennsylvania's worsted yarn survey is given in this issue. The report charts the rise and fall of spindleage over the last 12 years and shows that scrapping of machinery has not proceeded at a fast enough rate to make curtailment of production balance receding demand. *(page 20)*

Rough Face on Felted Goods

A process for obtaining a smooth face on knit goods which have been quite highly felted or fulled is outlined. The nature of the yarn and the length of time in fulling both have an appreciable effect in regard to smoothness of face. *(page 43)*

The Textile Outlook

THE old year closed in the textile markets without feature. Dullness ruled and there were no price changes worthy of comment. Several of the markets, particularly raw cotton and wool, were impressive by their steadiness. It is hard to analyze the portent this holds for the new year, since many economists have thrown up their hands in the matter of further forecasts. At least textiles will continue to sell through 1932 and the scantiness of stocks suggests that there must be constant replenishment by distributors. Only a small excess production turns a good market into a bad one and it is up to manufacturers to operate in line with actual current demand. Working only against orders as some large organizations are going to do might prove the salvation of the industry if generally adopted. Most of the spring coverage remains to be placed, and operations for that season may make the first quarter of 1932 better for cottons, woolens, silks and knit goods than was the last quarter of 1931. A certain amount of business lies ahead and mills have it in their own hands to name profitable prices on their products, if they will. They can thus write their own forecast.

Yarns Neglected

Worsted yarns were neglected during the last week of the old year. Prices were nominally unchanged. Spinners derive some backbone from the fact that raw material is steady. *(page 49)*

Wools Steady

Wools closed the year generally steady. The outlook for 1932 is considered much better than the outlook for 1931 this time a year ago. Medium wools are strong. *(page 51)*

Fabrics Sell Into February

Manufacturers of worsted fabrics note an encouraging trend to advance buying; some February business has been placed. *(page 53)*

To Manufacture Only Against Order

A. G. MYERS, president of Textiles-Inc., with a chain of 21 combed sales yarn mills in Gaston County, N. C., on Monday authorized the following statement:

"It is not our thought that night operation should be resumed by any mills and particularly ourselves or that any sales yarn should be manufactured except against a bona fide requisition for shipment."

This statement was made by Mr. Myers to supplement and clarify the news dispatches sent out from Gastonia last week to the effect that the mills operated by Textiles-Inc. were resuming full time operations.

Mr. Myers also stated: "It is not contemplated that our mills will resume night operations or manufacture any yarn for which they do not have shipping instructions. With many requisitions now coming in for shipments after Jan. 1, we feel confident that full daylight operations will be justified for our mills during the first quarter of the new year."

Knitting

Costing For Full-Fashioned Mills

The present highly competitive condition of the full-fashioned hosiery industry makes accurate cost-finding systems not only desirable, but necessary. A simple, yet effective system is outlined. *(page 22)*

Purchasing Mesh Hosiery

If mesh hose is being purchased from a producer of established brands, there is little need to fear a cheapening in quality. Tin weighting can be detected by two methods. *(page 42)*

Infants' Hosiery Active

Mills are taking orders for spring delivery on infants' and five-eighths hosiery; men's and women's lines are quiet. *(page 55)*

Underwear Demand Improves

There is better call for women's rayons and men's cotton lightweights, underwear mills report. January outlook uncertain. *(page 55)*

Swimsuit Surplus in Spring?

Fearing a bathing-suit surplus in spring which might cause a break in prices, some swimsuit mills have discontinued this line and are concentrating on other knitwear. *(page 55)*

Silk

Throwing Problems

The throwster is a key man in the silk industry. It is pointed out that the desirability of the final product is largely governed by the excellence of the throwster's work. The problems involved in this process are taken up with relation to quality and production. *(page 26)*

Loom Attachments

Two recent silk-loom improvements take the form of a new box motion and an improved driving clutch. *(page 40)*

Setting the Twist

Hard nature in silk is determined as the cause of imperfect setting of six-thread yarn. A treatment to overcome this resistance to setting is recommended. *(page 42)*

Silk Prices Again Decline

Weak buying brought a 5 to 10c. drop in silk prices, despite strengthening of yen and better tone in Yokohama. *(page 51)*

Novelty Fabrics Important

Broadsilks factors see stress on novelties in spring buying; canton crepes and rough goods enjoy fair call. *(page 53)*

Rayon

Specks in Rayon Elastic Tape

Twisted rubber warp threads are determined as the cause of a speckled appearance in rayon elastic tape. The most probable cause of twisted rubber warp threads lies in improper regulation of warp tension. *(page 43)*

December a Good Yarn Month

Encouraged by the good yarn demand in December, rayon producers look for a two weeks' lull, followed by activity the latter part of this month. *(page 51)*

Processing

Heating Piece Dye Kettles

Various methods of heating open kettles for dyeing piece goods are summarized. An improved method, insuring more uniform temperatures throughout the tub, would be welcomed by the industry. *(page 28)*

Duplicating Mohair Fabric

It is suggested that a light fulling treatment be applied to a mohair fabric in order to obtain a soft, pleasing effect. A routine for this process is recommended. *(page 42)*

Improved Piece Dye Kettle

Announcement is made of the development of an all-metal piece dye kettle. It is constructed of nickel-steel and is stainless and leak-proof. *(page 40)*

Brown Color in Bleached Goods

In bleaching cotton goods there are several precautions which should be taken to guard against the development of brown discolorations which may appear upon storage. *(page 43)*

The Business Outlook

BUSINESS begins another year in the uncertain atmosphere of several unresolved issues which still obscure the outlook. The difficulties of the domestic banking situation, the political complexities of the war debt and reparations problems, the critical condition of railroad credit, and the fiscal difficulties of the federal government are the outstanding obstacles to basic business revival because it is hard to see at the moment how, or how soon, they will be settled. But it is clear that decisive action on each of them is under way, and that by the second quarter of the year the news —good or bad—about all of them will be out. The disturbing uncertainties that are delaying business planning will be behind us, and we shall know what to expect in all of them. When the news is out we shall be sure that, so far as this country is concerned, there isn't any more to come, and the way will be cleared for recovery. Our reading of the domestic situation is that during 1932 deflation will be checked and further drastic readjustment avoided, and that the process of industrial expansion that has persisted in this country almost continuously for a century or more will be resumed.—*The Business Week.*

Survey Shows Machinery Scrapping Only Partly Effective *in Restraining Production*

AS THE first number in its woolen series, the Industrial Research Department, University of Pennsylvania, published in 1930 "What's Happening to Spinning Spindles in Worsted Sales Yarn."

Table I — Worsted Spinning Spindles in the United States, As of the end of the year, 1919-1931 (in thousands of spindles)

Year	English	French	Total
1919.....	1,658	755	2,413
1920.....	1,692	766	2,458
1921.....	1,712	773	2,485
1922.....	1,758	804	2,562
1923.....	1,800	891	2,691
1924.....	1,840	923	2,763
1925.....	1,863	929	2,792
1926.....	1,836	928	2,764
1927.....	1,826	933	2,759
1928.....	1,763	908	2,671
1929.....	1,723	897	2,620
1930.....	1,668	873	2,541
1931*....	1,672	872	2,544

*Preliminary figures as of the spring of 1931.

The preparation of that study suggested need for a periodic check-up on capacity changes in the entire worsted yarn industry. Accordingly the "Worsted Spindle Inventory" was devised and taken during the spring of 1931. The releases published thus far on the Inventory have been limited to a description of today's worsted spindleage—amount, kind, age, etc. To see today's worsted spinning capacity in its true perspective, however, one must have comparative data available for a period of years. The present report has been prepared by the Industrial Research Dept. to supply that need.

Changes in Number of Spindles

1. *The Industry Trend.*—At the close of 1919 there were slightly in excess of 2,400,000 worsted spinning spindles in this country. By the end of 1925 worsted spindleage had risen to an all-time peak of over 2,790,000 spindles, due to an excess of new spindles over those scrapped. Today the industry total stands at about 2,540,000 spindles, or only some 130,000 spindles above 1919. Spindleage for other post-war years together with comparative data for the English and French branches are given in Table I.

Reference to the reports of the U. S. Census of Manufactures and the Department's book, "Analysis of Production of Worsted Sales Yarn," shows that the post-war peak in worsted yarn production came in 1922-1923. The increase in capacity as measured by spinning spindles continued for two more years after the peak demand for worsted yarn had passed. As a matter of fact, had the piling up of equipment stopped at the end of 1922, only 150,000 spindles would have been added instead of nearly 400,000 as of the end of 1925.

2. *Relative Changes: English and French Compared*—Changes in two series of figures which differ considerably in size like English and French spindleage are best compared by focusing attention on their rates of change from some base year. Since the worsted spinning industry's big equipment expansion came after 1919, that year would seem to be a desirable reference point in studying spindleage trends. Chart I provides a percentage analysis for post-war worsted spindleage. There the 1919 figure on total worsted spindleage (Fig. A) is plotted as 100%, and the subsequent years as percentages of that base. Total spindleage in 1925 was 16% above the 1919 figure—it appears on the chart as 116%.

The reader will note on Fig. A a dotted line appearing with the worsted spindleage curve. This line represents the percentage changes calculated with mills completely idle excluded. For the most part these mills have been completely idle for some time. It is unlikely that many of them will ever be operated by present owners. Eventually the carrying charges on these mills will force either the scrapping of their spindles or the sale of their spindles at a price conducive to operation.

In Fig. A, the curve representing total worsted spindleage traces a complete cycle of expansion and decline in the capacity of the worsted yarn industry. There are between 2 and 3% less worsted spindles available for yarn production today than in 1919, if idle mill spindleage is excluded. But liquidation in physical equipment is not all that is necessary to deflate capacity. Variations in hours operated make for considerable elasticity in capacity. Moreover, the mere reduction of capacity to 1919 levels is no reason for expecting a return of 1919 conditions. It is likely that total demand for worsted yarn has fallen more rapidly than decline in spindleage.

As illustrated in Fig. B, English spindleage has now been reduced to its 1919 level, and 11% below 1919, if idle mills are excluded. To be classified as idle in any year, a mill must have been completely idle during the

Table II — Percentage Distribution of Worsted Spindles by Mill Types, 1919-1931

Year	Sales-Yarn English	Sales-Yarn French	All Weaving English	All Weaving French	Carpet English	Idle English	All Types
1919.....	24.3	9.2	40.6	22.1	3.8	...	100.0
1920.....	24.5	9.0	40.6	22.1	3.8	...	100.0
1921.....	25.0	9.3	40.2	21.8	3.7	...	100.0
1922.....	25.1	10.6	39.7	20.8	3.7	.1	100.0
1923.....	24.8	10.8	38.1	22.3	3.7	.3	100.0
1924.....	25.2	11.7	37.5	21.6	3.6	.4	100.0
1925.....	25.2	11.8	37.5	21.5	3.5	.5	100.0
1926.....	25.3	11.9	37.3	21.7	3.2	.6	100.0
1927.....	23.3	11.9	37.5	22.0	3.2	2.1	100.0
1928.....	23.1	12.1	37.1	21.9	2.9	2.9	100.0
1929.....	22.5	12.5	36.2	21.7	2.9	4.2	100.0
1930.....	22.2	12.8	36.7	21.4	2.2	4.5	100.0
1931*.....	20.2	12.7	35.8	21.4	2.2	7.5	100.0

*Preliminary figures as of the spring of 1931.

Table III — Worsted Spinning Spindles Scrapped, 1919-1931 (in thousands of spindles)

Year	English	French	Total
1919.....	2	..	2
1920.....	5	..	5
1921.....	3	..	3
1922.....	6	9	15
1923.....	4	..	4
1924.....	10	..	10
1925.....	8	..	8
1926.....	13	2	15
1927.....	22	..	22
1928.....	69	23	92
1929.....	44	12	56
1930.....	57	34	91
1931*.....	9	1	10
Grand total	252	81	333

*Preliminary figures for first nine months.

Table IV — Percentage Decline from 1925 in Total Worsted Spindleage (excluding idle mills) and Total with Each Spindle on Double Shift Counted as Two Spindles

Year	Straight Total	Total, double-Counting Double-Shift Spindles
1926	— 1.1%	—0.2%
1927	— 2.8	—2.2
1928	— 6.6	—5.8
1929	— 9.7	—8.7
1930	—12.8	—9.2
1931*	—15.5	—9.5

*Preliminary figures for first nine months.

entire year. In striking contrast French spindleage continues considerably above the 1919 base. This condition can probably be ascribed to the French system being better able than the English system to meet the demands of the post-war market. Moreover, the French system is usually employed in larger mills than the English system, and consequently the French mills have had more resources with which to meet competitive conditions of recent years.

3. *Shifts in Mill Types.*—In Table II the changes which have occurred since 1919 in the relative importance of the various mill types in relation to the industry are outlined.

4. *How Much Scrapping Has Been Done?* — That scrapping has been effective in reducing spindleage has already been indicated, but it may be of some advantage to see how much scrapping has actually occurred. The chart and tables thus far provided have shown only the net effect of scrapping. Table III gives in thousands the number of spindles known to have been scrapped during the last 13 years. It is known that other spindles were scrapped in addition to these, but in such cases it was impossible to distinguish accurately between those scrapped outright, those sold as replacements, and those sold as net additions to another mill's equipment. Consequently the figures can be regarded as under-rating the amount of scrapping which has acutally taken place.

Changes in Spindle Activity

1. *Is "Excess" Capacity Being Reduced?*—For five years the worsted spinning industry has carried a burden of from 25 to 40% in "excess" capacity or completely idle spindleage, with scrapping bringing no apparent relief. It is sometimes argued that the industry's "excess" capacity burden will be curtailed or eliminated through forced liquidation. That this must require a considerable period of time is evident from the experience of the last five years. During the three years, 1928, 1929, and 1930, about 79,000 spindles on the average were scrapped. If the "excess" capacity burden in spindles can be set as around 25 to 30% today, then a minimum of 635,000 spindles are involved. Supposing the 1928-1930 rate of scrapping to continue and little or no new equipment to be added, it would then require about eight more years for liquidation to perform its task.

But there is no assurance from recent experience to justify one expecting the elimination of excess capacity at the end of eight years. One should not lose sight of the fact that there is more involved than the mere physical reduction of spindleage. Demand may fall off more rapidly than spindles and so for a time allow no benefit from scrapping. Or a shift to the higher counts may mean activity for practically all spindles for a time. Double shift operation may also reflect itself in "excess" capacity; increasing double shift operation with little or no marked change in the total demand for yarn can only mean activity for fewer spindles.

In considering the "excess" capacity situation, it should be recognized that it is a burden of which no industry can completely divest itself. Demand is changing—not static. This requires flexibility in productive equipment which means reserve or "excess" equipment.

2. *Double-shift Operation and Capacity*—Some light can be thrown on the question of the double-shift's effect on capacity by noting whether or not enough spindleage has been added by double-shift operation during recent years to offset the spindleage eliminated by scrapping.

SUMMARY

Changes in the Number of Spindles, 1919-1931

1. *The Industry Trend.* During the last 13 years the worsted spinning industry has experienced an almost complete cycle of expansion and liquidation in its spinning spindleage. The expansion culminated in an all-time peak in 1925, 16% above the spindleage on hand in 1919. Scrapping had, by the spring of 1931, reduced this accumulation by about two-thirds.

2. *Changes in English and French Spindleage.* Mills exclusively on sales-yarn in both the English and French branches added relatively more spindleage during the post-war boom than did weaving mills with spinning departments.

3. *How Much Scrapping Has Been Done?* Over 330,000 worsted spindles have been scrapped in the last 13 years. Scrapping during the last five years has gone on at about the rate of 55,000 spinning spindles per year.

Changes in Spindle Activity

1. *Is "Excess" Capacity Being Reduced?* Despite a decline in total worsted spindleage since 1925, the industry has continued to carry an "excess" capacity burden of between 25 and 40% in spindles completely idle even in months of peak activity.

2. *Double-shift Operation and Capacity.* Although there was some increase in double-shift operation from 1925 to 1929, it was not sufficient to offset materially the decline in capacity brought about by spindle scrapping. But since 1929, further increase in double-shift operation has slowed down the capacity decline accruing from spindle scrapping.

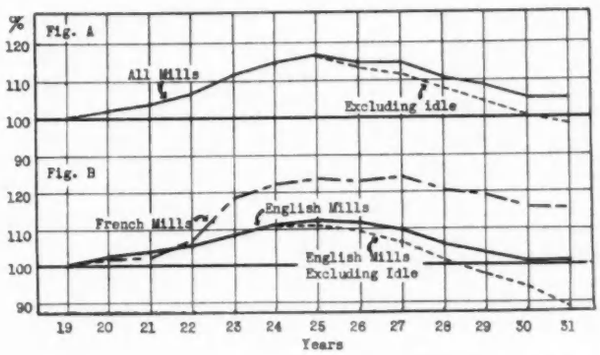


Chart I. Relative changes in worsted spindles, 1919-1931. Figures for 1931 as of spring 1919 = 100

This can be done in approximate fashion if one considers each spindle operated on double shift as equal to two spindles operated on single shift.

In 1925, excluding idle mills, there were about 2,778,000 worsted spindles on hand. It is estimated from the Bureau of Census reports on wool machinery activity that 211,000 of these spindles were being operated on double-shift during the peak month of double-shift activity in 1925. Double-counting these spindles as previously suggested would raise the 1925 total to 2,989,490 spindles. Now if the operation of spindles on double shift has not materially offset spindle scrapping during recent years, both of the spindleage totals just cited for 1925 should decline at about the same rate from 1925 to 1931. How these totals have changed since 1925 is described in Table IV.

This tabulation reveals that there was not enough increase in double-shift operation to offset materially the scrapping trend. However, those who may be looking to scrapping or forced liquidation as the "way out" can hardly overlook the significance of Table IV. It hints that increasing double-shift operation can materially slacken any decline in industry capacity due to spindle scrapping.

Cost-Finding System *Suitable for Full-Fashioned Hosiery Mills*

By M. G. Berg

General Manager, Ajax Hosiery Mills, Phoenixville, Pa.

ONLY a short time ago the full-fashioned industry was in a condition which did not demand accurate cost figures. The margin of profit was amply sufficient to produce a favorable leeway year after year, and the average manufacturer was satisfied with a fair net profit. He was not particularly concerned whether it was more or less than the previous year. Quite often the actual profit was far below the estimated gain for the year; but as long as a profit appeared, the business was considered to have been run satisfactorily, and no effort was made to account for this discrepancy.

Times have changed considerably. Instead of favorable statements we now have unfavorable ones; and instead of profits there are losses. The amount of loss is far more important to a manufacturer than the amount of gain; for if the loss reaches beyond a certain point over several periods, the mill will be out of business. It is necessary, therefore, to determine why the estimated profit and loss does not coincide with the actual figures. Now that his credit is being destroyed and the very foundations of his business are being rocked by these miscalculations, it is necessary for the hosiery manufacturer to get to the root of the trouble.

Use of a cost accounting system employing predetermined standards has long been gaining favor; and the full-fashioned manufacturer turns to this method. This system can be tied in with the general accounting; it discloses any differences between the predetermined standard costs and actual costs; and it tells the manufacturer the reasons for these discrepancies.

Manufacturers of hosiery have for years employed a crude cost system in conjunction with the running of their plants. There was an established cost sheet, used to some extent to determine the selling price. This also gave a vague idea of comparative costs, but made it possible to compare only some of the elements and not all of them. A cost would be established for a number, but it is impossible to know what part of the material cost, or what part of the labor or overhead cost, belonged to that particular style. By dividing the total amount expended for labor, material and overhead by the total production of all numbers, the hosiery manufacturers were able to estimate how near the actual cost was to the estimate. This method of course was unsatisfactory. Figures for styles which

Form 195 250 7-31 Meyers — **AJAX HOSIERY MILLS**

Sample No. 16 — Style No. 800

Date Mf'd 6-6-31 — Class — Courses per Inch — Total Courses — Sizes A-B-C

In Line 7-10-31 — Mfg. Notice No. 16 — Boot — Inches — Top — Inches

Out Line — Knit On — Machine — Gauge 45 — Needles

List Price $8.00 — Silk — % Merc. — % Rayon — % — % — %

Part	Wgt	Wgt	Wgt	Wgt	Waste	Total Yarn Req.	Count	Kind of Yarn	Date Price	Date Amount	Date Price	Date Amount	Date Price	Date Amount	Date Price	Date Amount
WELT						.18	4/1	73% PURE SILK	8.00	64						
LEG						.40	4/1	87% P.S.	5.00	1 80						
SPLICING						.05	100/2	S.I.C.M. YARN	1.50	08		2 215				
SOLE						.06	100/2	S.I.C.M. YARN	1.50	.09						
INSTEP						.06	4/1	87% PURE SILK	6.00	.24						
TOE						.03	100/2	S.I.C.M. YARN	1.50	.05						
HEELYARD						.005	100/2	S.I.C.M.Y	1.50	.007		32				
								Knitting Yarn		2 597						
								Resist Silk		02						
								Looping, Seaming Yarn		02						
								Transfers, Tickets, etc.		02						
								Packing Boxes, Wraps, etc.		12						
								Shipping Cases, Cartons, etc.		01						
								Total Material		2 787						
								Dyeing Cost per Lb: 25¢		96		2 783				

Inventory Data Material	Labor	Burden	Total	Direct Labor	Date 6-1-31 Amount	Date Amount	Date Amount	Date Amount
				Winding	02			
2.236	.92	.548	3.253	Legging	90	44		
2.236	.94	.611	3.786	Leg Examining	02			
2.235	.98	.637	3.852	Loose Coursing	04			
2.236	1.23	.709	4.264	Topping	25			
2.617	1.53	.994	5.141	Footing	30			
2.617	1.63	1.059	5.306	Foot [redacted] HELPING	10	71	1 63	
2.637	1.75	1.107	5.494	Looping	12			
				End Pulling				
2.637	1.89	1.163	5.69	Seaming	14	26		
2.637	1.91	1.171	5.718	Clipping & Turning	02			
2.637	1.96	1.191	5.788	Examining	.06			
2.637	1.99	1.203	5.83	Mending 15% OF 20¢	.03			
2.637	1.997	1.2068	5.83998	Latching 1% OF 75¢	.007			
2.637	2.001	1.2074	5.84584	Latch Mending 1% OF 40¢	.004			
2.637	2.005	1.209	5.851	Re-examining 15% OF 03¢	.044	115		
2.835	2.015	1.214	6.062	Sorting & Turning	.01			
2.835	2.015	1.264	6.212	Boarding	.10	41		
2.835	2.135	1.274	6.242	Classifying	.05			
2.835	2.195	1.279	6.257	Latching 1% OF 1.00	.01			
2.835	2.15	1.2815	6.2645	Latch Mending 1% OF 50¢	.005			
2.833	2.155	1.284	6.279	Pressmending 2% OF 25¢	.005			
2.833	2.156	1.2845	6.2795	Reboarding 1% OF 15¢	.001			
2.833	2.186	1.2995	6.3185	Pairing	.03			
2.833	2.1886	1.3075	6.3925	Third Latchers	.009			
2.835	2.187	1.30	6.32	Third Menders				
2833	2.207	1.31	6.35	Counting	.07			
2.833	2.217	1.315	6.385	Stamping	.01			
2.863	2.237	1.325	6.415	Folding	.07			
2.988	2.247	1.33	6.56	Boxing	.01			
				TOTAL DIRECT LABOR	2 247			
				TOTAL MATERIAL	2 787			
				TOTAL APPLIED MILL BURDEN	1 33			
				TOTAL MILL COST FINISHED	6 56			

.872 MILL BURDEN

Knitting	65	% on Labor	1 058
Looping & Seaming	10	% on Labor	104
Examing	40	% on Labor	046
Boarding	50	% on Labor	068
Classifying	30	% on Labor	026
Preparing	20	% on Labor	03
	215		1 33

STYLE 800 — DATE 6/1/31 — MILL #3 FLOOR 2

Fig. 1. Cost card showing charges for material, labor, and overhead

PAYROLL ANALYSIS

DEPARTMENTS / OPERATIONS	WEEK ENDING 9/5/31 Avge.	Product.	Piece Work	Time Work	Total	WEEK END Avge.	Prod.	TOTAL FOR PERIOD Total	Dozens	Amount
KNITTING DEPT.										
Winders	.012	1,000		12 00	12 00				4,000	48.00
Leggers	.91	1,000	900 00	10 00	910 00				4,000	3,640.00
Leg Examiners	.01	1,000		10 00	10 00				4,000	40.00
Loose Coursers	.03	1,000		30 00	30 00				4,000	120.00
Toppers	.25	1,000	250 00		250 00				4,000	1,000.00
Footers	.39	1,000	310 00	80 00	390 00				4,000	1,560.00
TOTAL KNITTING			1460 00	142 00	1602 00					6,408.00
LOOPG. & SEAMG. DEPT.										
Loopers	.12	1,000	120 00		180 00				4,000	480 00
End-pullers										
Seamers	.14	1,000	140 00		140 00				4,000	560 00
TOTAL L&S DEPT.			260 00		260 00					1,040.00
EXAM. & MEND. DEPT.										
Clippers & Turners	.02	1,000	20 00		20 00				4,000	80 00
Examiners	.05	1,000	50 00		50 00				4,000	200.00
Gray Menders	.178	140		25 00	25 00				560	100.00
Re-Examiners	.03	100	3 00		3 00				400	12.00
Latchers	1 00	10		10 00	10 00				40	40.00
TOT. EXAM. & MENDG.			73 00	35 00	108 00					432.00
TOT. DIRECT LABOR										7,880.00
Boarding Dept:-										
Sorters & Turners	.015	1,000		15 00	15 00				4,000	60.00
Boarders	.11	1,000	110 00		110 00				4,000	440.00
Total Boarding			110 00	15 00	125 00					500.00
Finishing Dept:-										
Classifiers	.02	1,000	20 00		20 00				4,000	80.00
Pairers	.03	1,000	30 00		30 00				4,000	120.00
Press Menders	.57	35		20 00	20 00				140	80.00
Latch Menders	.66	15		10 00	10 00				60	40.00
Reboarders	.15	15	2 25		2 25				60	9.00
Total (a)			52 25	30 00	82 25					329.00
Counters	.015	1,000		15 00	15 00				4,000	60.00
Stampers	.01	1,000	10 00		10 00				4,000	40.00
Folders	.02	1,000	20 00		20 00				4,000	80.00
Boxers	.01	1,000	10 00		10 00				4,000	40.00
Total (b)			40 00	15 00	55 00					220.00
Total Finishing					262 25					1,049.00
TOTAL DIRECT LABOR										8,929.00
INDIRECT LABOR										
KNITTING DEPT.										
Foreman					75					300.00
Forelady										
Fixers										
Yarn-handlers					20					80.00
Needle Straighters										
Clerks										
Learners (Leggers)					20					80.00
" (Loose Coursers)										
" (Toppers)										
" (Footers)					10					40.00
Allowances (Leggers)					6 75					27.00
" (Loose Coursers)										
" (Toppers)										
" (Footers)										
Bonus (Needles)										
" (Production)										
TOTAL KTG. DEPT.					131 75					527.00
LOOPG. & SEAMG. DEPT.										
Foreman	1/2 TO EXAM.				20 00					80.00
Fixers										
Clerks										
Learners (Loopers)					8 50					34.00
" (End-pullers)										
" (Seamers)					10 50					42.00
Allowances (Loopers)										
" (End-pullers)										
" (Seamers)					3 25					13.00
TOTAL L&S DEPT.					42 25					169.00
EXAM. & MEND. DEPT.										
Forelady	1/2 LOOPING & SEAMING				20 00					80.00
Clerks										
Learners (Clipp & Turn)										
" (Examiners)										
" (Grey Menders)					10 00					40.00
TO EXAM & MND. DEPT.										120.00
Grey Dept.										
Supervision					15 00					60.00
Baggers										
Total Grey Dept.					15 00					60.00
Boarding Dept.										
Supervision					35 00					140.00
Allowances										
Total Boarding Dept.					35 00					140.00
Finishing Dept.										
Supervision					22 50					90.00
Allowances										
Clerk										
Samples					15 00					60.00
Sales Returns										
Tot. Finish. Dept.					37 50					150.00
General Factory										
Janitor										
Tot. General Factory										
GRAND TOT. IND. LABOR										
Shipping & Stock Dept.										
Shipper					20 00					80.00
Tot. Ship. & Stock Dept.					20 00					80.00
Sales Dept.		Total	By Check	Payroll				Total		
Executives			100 00		100 00					400.00
Clerks			18 00		18 00					72.00
Total Sales Dept.			118 00		118 00					472.00
Cost & Purchas. Dept.										
Executives	1/2 BOOKKEEPING 20 00									80.00
Clerks										
Total C&P Dept.			20 00		20 00					80.00
Bookeeping Dept.										
Executives	1/2 TO COST		20 00							80.00
Clerks			18 00							72.00
Total Bkkpg. Dept.			38 00		38 00					152.00
REAL EST. OPERATG.										
Janitor	2/5 TO MILLWRIGHT				15 00					60.00
Watchman					20 00					80.00
Engineer					22 50					90.00
Landscaping										
Millwright	1/3 TO JANITOR				10 00					40.00
TOT. REAL EST. OPERG.				67 50	67 50					270.00
Administrative										
Officers			100 00							400.00
Clerks			18 00							72.00
Total Admin.			118 00		118 00					472.00
GRAND TOTAL					673 00					2692.00

Fig. 2. Payroll analysis for cost system

were losing money were hidden. Figures for other styles which were big money-makers, likewise, were hidden. Then there was a difference in departments, some operated below standard, others considerably above; but there was no definite way of telling this.

There are two kinds of cost systems commonly used—the job system, and the unit-cost system. The one best adapted for the hosiery manufacturer is the unit-cost system. A cost system will not take the place of a profit-and-loss statement or a balance sheet, but it will give a monthly check up on all figures, and will serve as a basis of comparison with the profit-and-loss statement and the balance sheet. All of this can be tied in with the general accounting, as previously stated, so that the actual value of all the work-in-process at any time can be found.

Unit Costs

A complicated system of cost accounting is not necessary in a hosiery mill. This will be apparent from the following example of the methods suggested. For the purposes of illustration a plant manufacturing only one style—and a plain one at that—will be used. The system advocated is one that can be handled by any mill, no matter how large or small; there are various refinements which can be made in it, but these are left entirely to the discretion of the manufacturer.

In general accounting we take into consideration three separate stages into which the goods can be classified: First, raw material, not in process; second, work-in-process; and third, finished product. These three divisions represent a change in account values, and are active controls of the whole system. For the sake of simplification, all materials purchased are carried in the inventory separately and are not placed in work in process. Everything that is placed in work-in-process is charged to that account at the actual cost, and adjusted afterwards to a standard; and anything that is taken out of work-in-process is taken out on the basis of the standard cost.

A predetermined figure in cost accounting can be set up in several ways; a normal cost, a deplacement cost, a budget cost, or an estimated cost may be used. The hosiery manufacturer feels that the estimated cost is probably the best to use. In making up the predetermined cost of the hosiery, we have to take into consideration three important elements: material, labor, and overhead.

Materials Employed

In considering the predetermination for materials consumed, the loss or waste has to be included; in other words, the process cost is used instead of a theoretical figure. In order to obtain this process cost there are a number of tests which can be made. There is an analytical test, a synthetic test, and a running test. In fact, the entire three should be used. The analytical test can be made by unraveling several stockings and weighing them on a finely graduated scale. The synthetic test can be made by weighing the raw material, placing it on the machine for manufacture in one or two sections, and taking the weight at the end. The difference between the weight at the beginning of the test and the weight at the end will give the amount consumed. There should also be made an actual running test for a certain number of dozens to check on the other tests.

A cost card is shown in Fig. 1 giving the weights consumed of each kind of silk and yarn in the style used for the illustration of the cost system under consideration. It is well to check this standard once a month. The inventory at the beginning of the month, plus the amount

of silk and yarn placed in work-in-process from stock, less the inventory at the end of the period will give actual consumption. This figure is compared with the theoretical weight, which is established by multiplying the number of dozens produced by the predetermined weight on the cost card.

In addition to this schedule on weight, there is also a schedule on the cost of material. A figure is established on the cost card which gives the estimated cost of materials used. This has to be compared with the actual cost of material which is charged to work-in-process during any one period. The difference will have to be debited or credited to work-in-process as the case may be, whether it is gain or loss.

Labor is divided into two parts: productive and non-productive labor. Cost of productive labor goes directly on the schedule of variations, and a comparison is made between the actual and the predetermined. The cost of non-productive part is used in calculating burden or overhead. As well as non-productive labor, there are, of course, other incidental expenses which are applied against this overhead. The figures for these expenses can be obtained from the accounting department in the course of the regular monthly check-up.

A payroll analysis is essential in maintaining an adequate cost system. In Fig. 2 is illustrated a payroll analysis which can be used in conjunction with the cost system in any hosiery mill. It will be noted that the payroll analysis is divided into direct labor, indirect labor, and administrative and sales expense. In the cost system which is advocated, the administrative and sales expense item is not applied directly on the cost card, but comes out of gross profit on a separate basis. This will be explained later. The payroll analysis which is illustrated can be simplified or expanded, according to requirements. (*To be continued.*)

POINTERS ON PATENTS . . .

The Patent Application

THE application for patent consists of the following parts:

1. Petition to the Commissioner of Patents requesting the grant of a patent and usually designating a patent attorney who is to represent the inventor before the patent office during the prosecution of the case. The power of attorney may, however, be filed separately at any time after the application is filed.
2. Oath taken by the actual inventor to the effect that he believes himself to be the first and original inventor and that he has not abandoned or forfeited his right to a patent.
3. Specification describing the invention and how to make, construct, compound, and use the same.
4. One or more claims, each defining the part, improvement, or combination which the inventor regards as his invention or discovery.
5. Drawing illustrating the invention and showing all features covered by the claims, whenever the nature of the case admits of illustration.
6. Government filing fee. At present the government filing fee is $25 if the application contains twenty or less claims; otherwise an additional $1 must be added for each claim over twenty.

All the parts of the application need not be filed at the same time, but the application must be completed and prepared for examination within a period of six months.

The inventor should not, unless he has had extensive experience in the specialized practice of patent law, attempt to prepare his own specification and claims. For, as stated by the Supreme Court, "The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy."

The specification must fulfill certain minimum requirements to support a valid patent. It must be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains to make, construct, compound, and use the same. There must be no doubt of its meaning. If any feature essential to the successful working of the invention is withheld, even if unintentionally, the patent will be held void.

The inventor is not required to state all the advantages and functions of his invention nor all the uses to which it may be put. Neither does he have to set forth the scientific principles or theory underlying his invention or the causes which produce the desirable result.

If the inventor is doubtful as to what to include in the specification, it is advisable to state exactly what was done to produce the new result, pointing out which steps or elements are considered dispensible or non-essential or may be varied. If the description is too full or prolix, it may be later restricted by appropriate amendment. However, if any essential part of the invention is omitted or stated vaguely, even if unintentionally, correction can only be made by means of a new application.

The claims define the scope of the patentee's monopoly. it is, therefore, important that they should be drawn with great care so as to clearly indicate in a few apt words exactly what the inventor believes he has invented in view of the prior art.

If the claims are so broad in their terms as to omit elements essential to the operation of the device or to include within their scope old devices, they will be rejected by the patent office or held invalid by the courts when sued upon. On the other hand, if they are too narrow or restricted, competitors may easily avoid the patent by omitting or varying some non-essential element. It is usual, therefore, to include both broad and narrow claims in the application—broad claims omitting all dispensible or non-essential elements, and narrow claims to guard against the contingency that the broad claims may be held invalid.

Before signing the application, the inventor should read it carefully and compare it with his original description, sketches, and models in order to assure himself that the invention is fully and clearly described and claimed. This precaution should be taken in all cases without exception, whether or not the application has been drawn up by a patent attorney.

This article is based on Bulletin No. 10 of the Patents Committee of the Technical Association of the Pulp and Paper Industry and is presented to readers of TEXTILE WORLD through the courtesy of this committee.

Modified Serigraph Method

Proves Valuable for Testing Yarns in Woven Fabrics

By Katharine Hess

Associate Professor, Department of Clothing and Textiles, Kansas State College

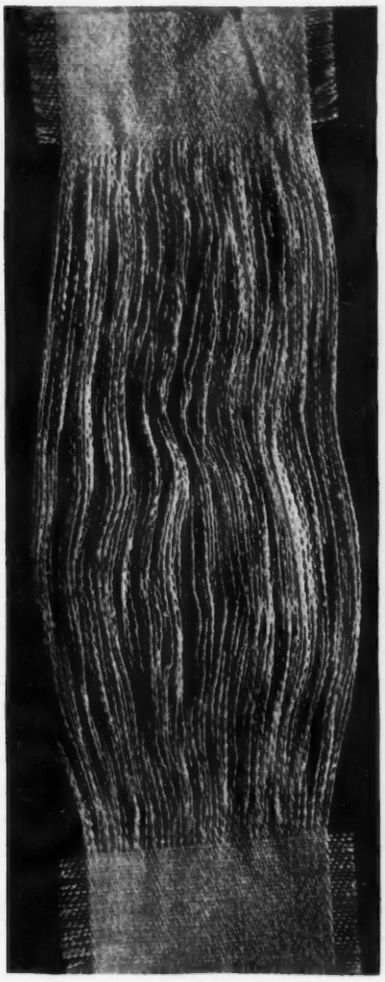


Fig. 1

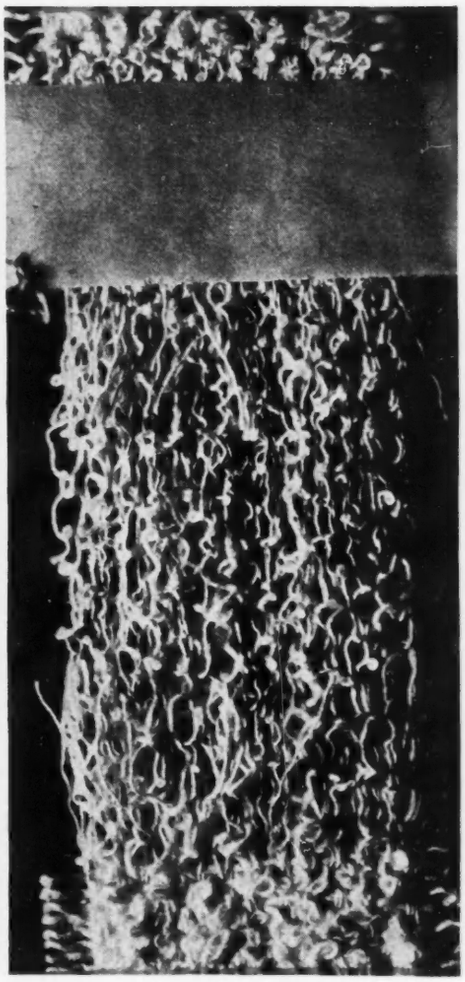


Fig. 2

Fig. 1. Serigraph prepared from fabric strip. Fig. 2. Serigraph of terry-woven cloth illustrating use of gummed paper. Paper should be fastened on both ends before strips are broken. This photograph shows ends of ground warp which were cut.

WHILE the advantages of the serigraph method of breaking a number of parallel yarns at the same time are recognized, the application of serigraph tests to yarns already woven into a fabric is commonly regarded as difficult, and for this reason the use of these tests has thus been discarded. However, a modification of the serigraph method has been found to give satisfactory results as a test of yarns in the woven fabric. The specimens are quickly and easily prepared and permit yarn tests when a single-strand testing machine is not available and when only a small piece of material can be secured.

In addition the serigraph method permits many valuable tests that otherwise would be difficult or impossible. For example, the ratio of the difference in the strength of the serigraph and the fabric strip to that of the strip is the percentage of breaking strength gained by the interlacing of the filling yarns. This provides an interesting approach to the problem of the effect of weave on the breaking strength of cloth. A comparison of the percentage gained by the various weaves can easily be worked out.

The procedure is as follows: Prepare fabric specimens in the usual manner, cutting them 6 in. long and $1\frac{1}{4}$ in. wide. Remove the central 3-in. portion of the cross-wise yarns, and ravel the specimen to exactly 1 in. Removal of the cross-wise yarns before raveling the sides of the specimen permits the accidental removal of a length-wise yarn without destroying the specimen.

An accurately prepared serigraph of this kind will give a strip of parallel yarns exactly 3 in. long held together at each end by $1\frac{1}{2}$ in. of the original fabric (Fig. 1). These specimens should be broken in a fabric tester with the jaws of the machine set 3 in. apart. Care should be taken to clamp the jaws exactly on the edge of the fabric portion of the strip. This is a simple and quick method of maintaining a uniform length of material between the jaws of the machine. The necessity of other means of adjusting the specimens under definite tension will thus be eliminated. As in all other tests, specimens that break at the jaws of the machine or those in which the yarns slip in the fabric ends should be discarded.

The breaking strength of uncut pile, such as in terry-woven fabrics, can be obtained by removing not only the cross-wise yarns, but also the ground warp from a small central portion of a strip specimen and breaking the pile warp as a serigraph (Fig. 2). In some instances it is difficult to remove the ground warp from the center of the strip without disturbing the pile. In such cases the specimen can be placed in the machine, the ground warp broken, and the machine stopped at once and set back to zero. The specimen is then treated as a serigraph.

The exact amount of filling yarn to remove from the center of a terry or similar fabric to allow for the breaking of 3 in. of pile yarn will be determined by experiment. The depth of the pile and the number of loops to the inch varies for each piece, and these determine the length of the pile yarns woven into an inch of cloth. The pile may be securely held in the ends of the serigraph by means of gummed paper. This will prevent any tendency of the pile to slip in the cloth.

Quality Production and Better Merchandising *are Urgent Problems of Silk Throwster*

*By H. E. Bishop**

John Dunlop's Sons, Inc., New York

PROBLEMS surrounding the production and marketing of thrown silk are legion. Many general problems may seem to be solved only to reappear in other forms, along with new ones. Quality is vitally dependent upon the application of scientific methods in every step of manufacture, but only those methods which are practical when considered from the standpoint of cost and capacity of the workers can be utilized.

The first consideration is, of course, the selection of the raw stock. No amount of care in the mill can produce a fine quality yarn from an inferior raw silk. Practically all dealers in thrown silk maintain their own testing laboratories for grading purposes. Even when silk is purchased on a certified basis, these laboratories examine deliveries to see what material the raw stock should be thrown into.

For example, let us suppose stock is needed for organzine. It can often happen that the silk will conform in every particular to the classification committee standards and yet will be unsuitable for this purpose. Organzine requires a silk stronger than the minimum standard set up and one which does not show a lousy condition, for which latter characteristic there is not, and probably never can be, a test which can be included in the classification standards.

In hosiery yarns it frequently happens that the minor defects will not permit rejection and yet will be so serious that the finished product would be quite unsuitable for the purpose intended. Frequently raw silk will carry a quantity of loops long enough to appear in the stockings when the silk is thrown into medium- or low-twist tram.

No trade classification can ever do more than provide a general basis for buying and selling; but the buyer must go beyond that point to assure himself that he does not damage his interests by putting the raw stock into material for which it is unsuited.

Soaking

Much emphasis must be placed on the soaking operation, for it has a great deal to do with how the material handles in the mill and with the weaving or knitting qualities of the yarn produced. The number of solutions used is almost as large as the number of throwsters. For although there are but relatively few substances or classes of materials used, the manner in which they are combined and the conditions under which they are used are different in practically every mill.

Temperature is important. Everyone knows that, and everyone has his own limits; but how many make a practice of checking their thermometers regularly?

Machine soaking is receiving a great deal of publicity at present. It is stated that much greater absorption is obtained than where the silk is simply placed in the solution and left overnight, and it is also asserted that the quality of the finished material is improved.

Thanks to the Silk Association of America, Inc., and the United States Testing Co., Inc., there have been made available through the latter organization throwster's tints of satisfactory nature because of their fugitive quality and their uniform tinctorial value. Tints are extremely important. They are vital in keeping twists and lots separate through the mill. They must be fugitive, or else trouble will be encountered; and they must be fugitive in relation to the treatment they will receive in practice.

Recently a hosiery manufacturer tried out half a dozen throwsters by having them throw some four-thread, fifteen-turn tram both natural and tinted. The manufacturer then knit stockings, having the legs contain first natural and then tinted yarn of the same throwster. All these stockings were then dyed and finished by the same dyer in the same bath. Stockings of yarn made by two throwsters showed two shades in the leg, which the manufacturer felt must be due to the tints used.

Machine Speeds

The speeds of the winders, 5-Bs, spinners, redraws, and coners are all important. They must be regulated with proper regard to speed of production, cost of power and labor, and quality. Machine speeds are varied depending upon the nature of the material being processed. Tussah and Japan raw silks, for example, are best wound at different speeds, due to the different winding qualities of these silks.

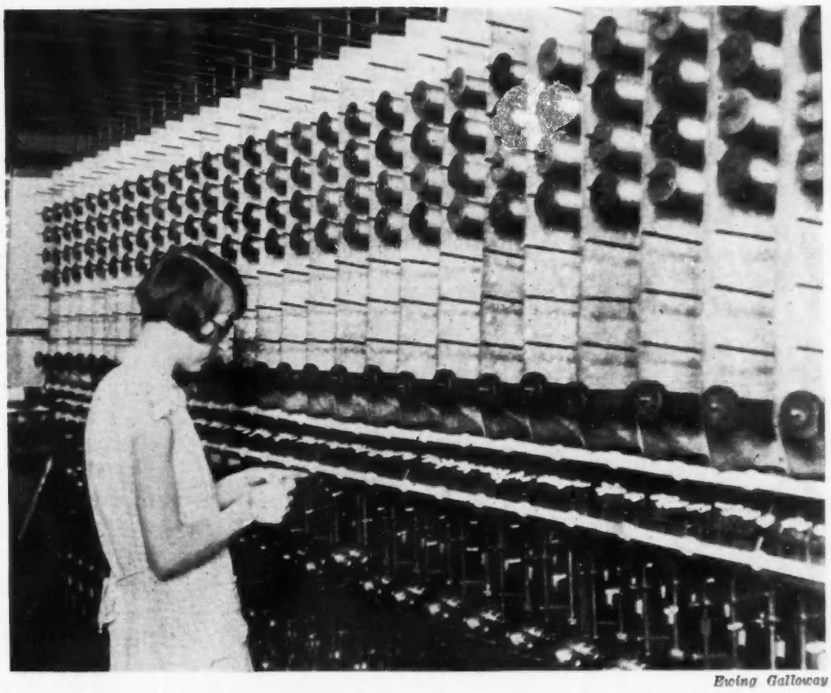
It frequently can happen that operators will be working on the same material on machines which vary in speed. It is natural, of course, that workers on the

*Abstracted from a paper delivered at the Raw and Thrown Silk Problems luncheon of the National Silk Convention, Paterson, N. J., Nov. 18, 1931.

slower-moving machines will usually turn out less work than those working on faster-moving machines. From a quality control standpoint also it is advisable that speeds be uniform.

Spindle speeds are usually checked by a tachometer; a more accurate but more expensive apparatus is the Stroborama, which can be employed to test all moving parts in a mill. The testing is done by means of a lamp which flashes on and off at speeds which can be regulated with great accuracy. In testing spindles, the bobbins are painted on top with a white line from the center to the edge. When the light is focused on the bobbin to be tested, the indicator can be turned to that point at which the interruptions or number of light flashes correspond to the revolutions of the spindle; and at that point the white line will appear to stand still. The reading on the indicator will then give the exact speed.

Where wage incentive systems are in use, the Stroborama is of value in keeping all speeds uniform. Many mills employ piece-work systems which pay the workers a stipulated amount per pound. For example, the operators will be paid a given amount for all Japan silks and another given amount fall all Cantons. No mill man wil claim that all lots of Canton or Japan silk run the same, and yet the operators' pay by this system remains unchanged.



Ewing Galloway

Speeds must be regulated with regard to production, quality, and costs

Wage Incentive Systems

A more satisfactory procedure is to pay the operators for labor effort, which must include quality as well as quantity. Such a system functions on the basis of establishing what is a fair amount of labor effort to be expected from the reasonably good operator for each operation, and then grading each lot of material coming into the mill, by actual test, into terms of labor effort. In this way, each operator is paid for the exact amount of effort expended; and the incentive is set up for unusual energy or ability. Under such a system there is a feeling among the workers that all are being treated fairly, which helps to raise the general morale. Such systems, carefully developed and installed, are extremely expensive, but can be made well worth their cost to the mill owners.

The first reaction to the establishing of a wage incentive system is that speeding up of workers will mean more careless work. Naturally safeguards must be thrown up to check the worker, but no more so than under any system. In fact, experience shows that 75% of the bad work is produced by 25% of the hands, which means that the inefficient and uninterested are liabilities under any system. Under a proper wage-incentive plan the work of this class is immediately shown up in clear relief, which enables the management to extend all the assistance possible and if this has no effect, to make replacements.

Tensions

Hard and soft bobbins, bobbins with ridges, cops with ridges, cones so soft the silk slips off, and others too hard are all conditions which turn a customer quickly against the throwster. It makes no difference if the silk has been carefully soaked and thrown. If the final package is not right, the customer is displeased and rightly so, because such a condition means extra cost to him. Inspection of the finished package must be rigid because it is the mill's last chance before the customer receives the goods.

Yardage is an important factor for the weaver, but is one over which the throwster should exercise no arbitrary control. Silk should be carefully redrawn at correct tension. If the silk is stretched by the throwster to obtain greater yardage, the yarn will be permanently injured. Yardage should vary in the same yarn principally as the denier size of the raw silk varies.

Setting of Twist

Setting of twist is carried out by three general methods: water set, steam set, and vacuum and steam system. The principal precaution in setting twist is to watch the time and temperature factors. Some mills producing high-twist yarns consider these items of sufficient importance to warrant the installation of automatic controls.

Merchandising Problems

If manufacturing problems are difficult during times of depression, those of marketing are doubly so. In the last year we have seen crepe spindles busy with real silk, then busy with rayon, and then lying idle for want of either or both. We have seen the consumption of the knitting trade fall to practically nothing and the character of the yarns used change materially. During this period of time the mortality of business firms has been high.

Under such conditions of change and strain, what yarns shall we carry in stock and how much of each? On what markets shall we concentrate our major efforts? To whom shall we grant credit and how lenient shall we be with claims? These are the major marketing problems of the thrown-silk dealer at the present time.

Improved Method Wanted for Heating Piece Dye Kettles

◆ *Recently our Questions and Answers department received an inquiry in reference to the most efficient method of heating open kettles for dyeing piece goods. Due to the importance of this problem, we are presenting herewith some of the questions asked and our replies thereto. Although the information requested relates particularly to dyeing of woolens and worsteds, the principles involved are for the most part equally applicable in processing other types of fabrics. Our investigation disclosed the lack of authoritative published data on this subject; and we shall, therefore, welcome comment from any of our readers who can supply further details.* —Editor.

WE ARE interested in finding a practical means of improving the quality of the work and at the same time decreasing the cost for steam, dyestuffs, and labor in dyeing woolens and worsteds in open kettles. Our immediate problem is in the processing of woolens and worsteds. It has been noted that when perforated steam pipes are used for heating and agitating, lack of uniformity of temperature across the top of the dye liquor and at various elevations, together with the straight-line movement of the fabrics, frequently results in streaky dyeings. Likewise has been observed the weakening of the solution due to admission of live steam into the bath. We believe that it is possible to remedy these conditions and shall appreciate your advice on the following points:

What is considered the best method for securing uniform heat distribution in piece dyeing woolens and worsteds at a boil in open machines of the Rodney-Hunt type?

In one large mill which processes both woolen and worsted men's wear and women's dress goods in kettles of the Rodney-Hunt type the perforated-pipe method of heating the dyebath is the only one used. Results are entirely satisfactory. Several years ago careful tests were made to determine the temperatures at various locations of the bath. The accompanying illustration (Fig. 1) shows the results. There were two steam coils, one fed from each end of the kettle, and located between the front of the kettle and the perforated false front. Low-pressure steam was bled from a steam turbine and was supplied at 10-lb. pressure. The design of each coil is shown in Fig. 2. In a 6-ft. kettle, only one coil is used. The pipe is copper, with fittings of brass. This type of coil has been found to insure equal distribution of steam throughout the length of the pipe. Low-pressure steam is preferred to high-pressure, since it can be controlled with greater nicety. In this particular case it was far more economical, since byproduct power had already been extracted from the steam as it passed through the turbine before going to the dyehouse. The wider the kettle front to back, the better will be the circulation and the more uniform the temperatures throughout. The wider kettle holds more water to float the goods, and the folds of the cloth as it comes down into the kettle from the reel will open more and change their position more often, thus giving more uniform dyeing. A narrow kettle forces the goods against the false front and interferes with the circulation. Goods thus processed ran as high as 22 oz. in weight.

Have you any data in regard to amount of dilution caused by condensation of steam in the dye solution?

Several years ago tests were made at the plant mentioned previously to determine how much steam was condensed in the dyeing operation. The method did not exactly duplicate the dyeing operation, as no cloth was put into the kettle. The kettle was filled to the usual mark with water, steam was turned on, the bath brought up to the boiling point, and then boiled for the same length of time as in the actual dyeing operation. At the end of this time the increase of volume of water was noted. These tests showed the amount of condensate to be from 20 to 25%. With no goods in the kettle, there probably is not the same cooling effect as in the actual dyeing process; and therefore less steam was used than in actual practice. A few tests would quickly show the amount of dilution, and the dyebath could be made up accordingly to permit the proper concentration.

Have you any information concerning the benefits of temperature regulation in the dyeing process? Does it improve quality and permit savings of labor, dye, and steam?

Automatic temperature control is no doubt advisable in practically all processing operations. It tends to greater uniformity of results, to a large extent eliminates the human factor, and usually permits a saving of steam. The extent of the saving depends largely on the skill and intelligence of the operator. One considerable source of steam saving with automatic-control apparatus is due to the fact that after the dyebath is brought to the boil, only sufficient steam is admitted to keep the solution at the boil; whereas, the careless operator would blow excess and unnecessary steam through the liquor. At times it is desired to keep the liquor in more violent circulation than would be the case if just sufficient steam were admitted to keep the bath at the boiling point. In such cases the automatic-control equipment is disconnected for the time being, and the admission of steam controlled by hand.

We do not know of any tests which indicate savings of dyestuffs effected by the use of control apparatus.

Tests on individual kettles have shown steam savings of 20 to 30% by the use of automatic control. Several years ago TEXTILE WORLD described a system of central temperature control installed in the dyehouse of the Hamilton Woolen Co. At this mill tests were run on piece dye kettles with both automatic and hand control of steam valves. In the majority of cases a saving in steam of over 20% was obtained with the use of automatic control.

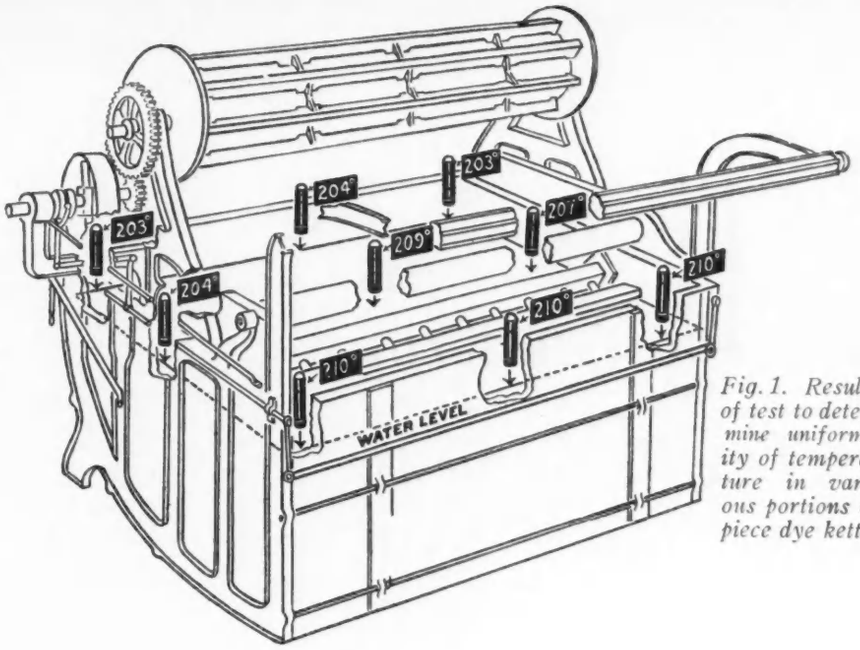


Fig. 1. Results of test to determine uniformity of temperature in various portions of piece dye kettle

We believe that a circulating pump, drawing the liquor from the front, bottom, and center of the kettle and discharging through a diffuser along the back of the tub near the top and at the ends—if desired—would be practical. Also we believe that a system, similar to that used on some types of kiers, consisting of a combination of circulating pump and closed heater would be advantageous. Will you give us your opinion as to the feasibility of these methods and advise us whether there are instances where a circulating pump is used in connection with an open dye kettle?

Theoretically, use of a pump and outside heater should be the most efficient method of heating and circulating dye liquors for use in open kettles; and we believe that this problem is worthy of study. It should be considered, however, that if the pump method were used, it is possible that pockets would be formed in the kettle in which the circulation was not effective or at least not as effective as in other parts of the kettle. In these pockets the liquor would not be changed as often as in other parts. The proper location of the suction and discharge of the pump would have to be determined carefully to prevent the formation of pockets.

At the present time general practice is to use live steam. It is our impression that in one or two instances experiments have been conducted with the pump-circulation method, but we have seen no data giving the results of these trials.

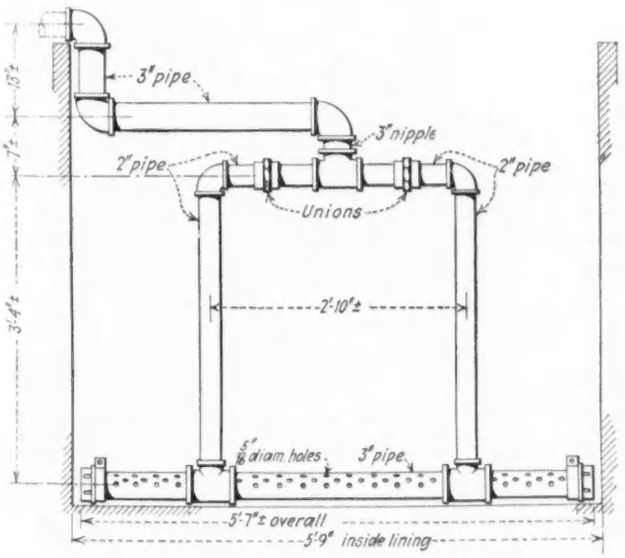


Fig. 2. Steam coil for heating dye liquor in open kettles

Can you advise us of any harmful affects of starting to dye with water of moderately warm temperature (90 to 100° F.) instead of with cold water?

The temperature at which wool dyeing is carried out varies according to the particular dyestuffs employed. Certain dyestuffs begin to go on the fiber at lower temperatures than do others; but it is our opinion that with most dyes no harmful effects would be encountered at the comparatively low temperature of 100° F. Simple tests with the particular dyestuffs you are using will indicate whether or not 100° F. is a suitable starting temperature.

What is your opinion of a plant set-up which will afford a reasonable volume of stored hot water to be used as required and thus reduce the peak demand from the boiler? Also, do you believe it feasible to reclaim the majority of the condensate and the wasted heat from the tub water?

Any arrangement which will store hot water for future use and thus lessen the peak demand for steam on the boilers is of advantage, and should be employed where possible. Waste-heat exchangers are now in use for recovering the heat in outgoing hot liquors of any nature, and possibly these could be utilized in recovering the heat from the discharged dye liquors. Since these liquors are often acid in nature, there is the question of how much corrosion would occur in the metal parts of the unit type of exchanger. For large effluents open concrete troughs in which are immersed the piping conveying the water to be heated are used. Because of possible flocks in dye-kettle effluent, this open type seems better fitted for this purpose than the unit type of exchanger which is built like a feed-water heater. It must be remembered that as a rule dye-kettle liquors are not discharged at once, but cold water is gradually admitted in order to lower the temperature of the bath, while at the same time an equivalent amount of hot water of gradually decreasing temperature is discharged. Thus the temperatures of the outgoing water and the water being heated would approach each other. We do not know of any plant where such an arrangement has been used; and therefore cannot give any performance data.

Mechanical Accidents

Are Too Numerous in Textile Industry

*By G. F. Tonks**

IN A textile plant it is not unusual to find two or three times as many machines in operation as the total number of employees working in the mill. An investigation of 60 cotton mills shows a total of 33,300 employees and 119,300 machines. This very high mechanical exposure should be sufficient reason to stimulate the providing of adequate guards for all machines wherever possible.

Workers are usually paid on a piece-work basis, and this is probably the reason that so many accidents are caused from cleaning machinery while it is in motion. Most mills have posted warning signs that forbid this practice, but it is true that at least 16% of the accidents still occur from cleaning machines in this manner. For further comparison we might add that the average percentage of mechanical accidents in other industries is about 27%, while in the textile industry the mechanical accidents total 44%, or nearly double the average ratio for other industries. We might further add that the actual days of lost time are three times as great in cotton mills as in any of the thirteen other major industries considered.

Cotton in bales is usually delivered to the mill, either by truck or railroad car, unloaded, and stored until required. Here we have the problem of lifting these heavy bales without the aid of hoist or conveyor systems, and strains from lifting are common to employees in the receiving department. In the opener room we have a peculiar problem that arises from cutting the strap-iron bands. If care is not used in this operation, it is not unusual to have the bands fly back and severely cut the employees around the face or arms when the tension on the band is released.

In the picker room hazards are found in unguarded belts and shaft-ends, a lack of inter-locks on beater covers, and the habit of the employee in starting the lap around the lap bar and having his hand caught in the machine. The dropping of this heavy lap bar on the feet is another problem which usually has to be taken up with the individual worker.

Machines in the card room have a great many moving parts and are crowded so close together that we often wonder how some employees can pass between the machines. Cleaning the machines while they are in operation and opening the stripper cover are both dangerous gestures and often result in severe accidents. The standards for this machine require an interlock on the stripper cover; and although few mills have this device attached to their machines, the vacuum stripper goes a long way to prevent this type of accident.

Slubbers, speeders, and roving frames can be considered together, as they are very similar in operation. These machines usually have speed controls on the reverse side of the machine, and change gears are often exposed. The draft gears are usually enclosed, but very seldom do you find interlocking mechanisms on the belts. One practice that should be discouraged is the habit of hiding the cleaning brush inside the gear cover.

The slasher room may or may not be a problem. The warps should be lifted into position by some mechanical means; an hydraulic, cylinder lift or a chain fall, either manual or motor driven, should be provided. This lifting mechanism, when provided with an overhead monorail or track, will almost completely eliminate the lifting hazard. The size kettles should have enclosed gears and should be provided with heavy covers that will help in preventing the size from boiling out. The main steam line should have a reducing valve as near the kettles as possible, and each unit on the machine should also be equipped with a reducing valve.

The weave room will probably have as many employees in it as all the other departments combined. Looms are placed as close together as possible; and when an employee falls, he will probably get tangled up in the machines and be badly injured. Jacquard looms are probably the worst with respect to accidents, and the cranks operating the overhead machines should be protected. Inspection tables give little trouble, but the shear can cause bad hand injuries unless this machine is left entirely alone while it is running. The folder appears harmless, but often an operator will get his hands under the blade and will rip off a finger-nail or break one or more fingers.

We may now consider the guarding of the machines in groups. Wherever possible the foolproof or interlocking guard should be used. This type of guard is so designed that it cannot be removed while the machines are running.

There are other various forms of mechanical protection which are desirable for textile machinery, such as the elimination of all protruding setscrews, keys, bolts, and other dangerous projections from revolving parts, and the enclosing of dangerous shaft ends. All crushing or shearing hazards should also be protected.

In analyzing accidents, we find that most mechanical injuries are traceable to the following causes: cleaning machinery while in motion; and improper guarding of gears, belting, shafting, setscrews, and abrasive wheels. The non-mechanical causes that contribute the greater percentage of this type of injury are: handling material; falls; burns; eye injuries from chemicals, gage glasses, and molten metal; and injuries from vehicles which are not self-propelled.

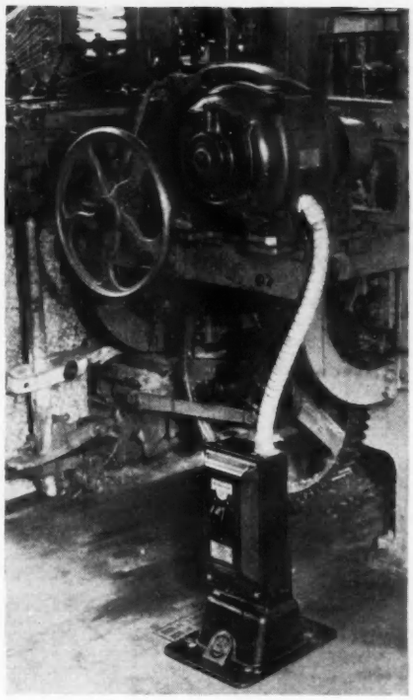
*Abstract of paper delivered by G. F. Tonks, resident safety engineer, Liberty Mutual Insurance Co., Charlotte, N. C., before the second annual North Carolina State-Wide Safety Conference, Charlotte, N. C., Nov. 5-6, 1931.

Year's Electrical Progress . . .

as It Affects Textiles

By H. W. Reding

Westinghouse Electric & Mfg. Co.
East Pittsburgh, Pa.



Loom motor and a switch which affords safety with respect to personal hazard and fire

THE electrical manufacturers have studied their market in the textile industries to develop new and more efficient methods of driving machinery, and to provide equipment which will operate with the decreased maintenance expense.

One item of this type is a new circuit breaker for controlling industrial lighting circuits. There are no plug or cartridge fuses in the design anywhere, and yet the protection afforded is much better than could possibly be done with fuses. In case of overload or short circuit the switch automatically trips itself out, protecting the wiring and lights; but it can be reset and reclosed without replacing any fuse link or other renewal element.

In the rayon industry, there is a marked tendency to increase the speed of the rayon spinning motors and buckets, and this tendency has resulted in greatly improved design permitting higher-speed operation with decreased maintenance and greater safety.

Gear Motor

In the way of self-contained drives, there are now at least two types available which would have certain textile applications. A self-contained gear motor and speed-reducer unit can be supplied in various ratios up to about 10 to 1. This permits direct connection to low-speed shafts without the use of an intermediate driving unit for speed reduction. The second of these units is a multiple-speed gear drive by means of which the speed of the output shaft may be changed by shifting gears within the mechanism. It is not necessary to disengage the motor from the gear by means of a clutch when shifting gears. These may be shifted while running overload.

Perhaps one of the developments of most popular interest during the year has been with regard to the so-called self-cleaning motor. The operating temperature of the average textile motor (with the exception of small loom motors) depends upon the circulation of air through the windings to cool them. The so-called self-cleaning motor is an attempt to provide a motor which will pass the lint entirely through without allowing it to collect on the inside. It seems at present to be impossible to design a textile motor which will pass all of the lint which might get into it. A much better name for a motor of this kind might be an easy-cleaning motor—or, in other words, one which will pass the greater part of the lint through and one which may readily be cleaned out without disassembly or other unusual steps.

In this motor a characteristic point is the extra treatment given the windings of the motor to make them smooth so that lint will not tend to collect on the rough surface. This treatment introduces a thick paste filler on the outside surfaces of the coils. As yet no filler of this kind has been developed which will not crack after a period of operation in average textile service. Such cracks will have very little detrimental effect with respect to the self-cleaning features of the motor; but if this filler or paste is depended on for insulation, the winding is bound to have a short life, since moisture and dirt will enter such cracks and eventually bring about a failure in the winding. For long life and trouble-free service it is absolutely essential that the motor windings be thoroughly insulated with cotton tape and varnish treatment before any of the filler is added. One other primary essential of a motor of this kind is a bearing design which will keep the lubricant from getting into the motor and on the windings. Such oil, if present, will certainly begin to collect lint, which in itself collects more lint. A sealed sleeve bearing is effective in keeping the windings dry and at the same time results in greatly decreased maintenance. The oil does not escape from the housing. In the absence of a sleeve bearing which is thoroughly sealed, it is necessary to use ball bearings.

Installations made during 1931 show a very marked tendency to use V-belt drives for roving, spinning, and twisting frames. There is also a decided trend to the use of starting equipment which combines in one cabinet a fused disconnection switch and a linestarter.

For controlling loom motors, modern installations are making use of a switch which provides accurate thermal overload protection without the use of a renewable element (see accompanying photograph). A switch of this type always embodies two heater elements which cause the switch to trip on overloads. Under certain emergency conditions it is possible for these heater elements to be burned out—such a condition, for instance, being a short circuit on a motor. This is obviously a rare event, but it is essential that the switch be so designed that there will be no damage beyond the loss of the heaters, which may be quickly and very inexpensively replaced. Even more important than safety to the switch itself is the fire hazard. Lint will accumulate to a certain extent inside a switch box.

Overseers' Round-Table

THIS department offers a new subject for discussion each week and gives readers' comments on problems introduced during previous weeks. The subject which was opened four weeks ago is closed this week and a summary of contributed ideas is given on opposite page

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Payment by Piece-Rate

Editor, Overseers' Round-Table:

THE PIECERATE plan is unsound business and many companies who have adhered to it for years are now abandoning the plan. It seems that Pete would like to revive an antiquated system.

It is a difficult matter to maintain quality under this system as the incentive to slight work in order to make more money is too great. Then, it is hard to establish a fair rate. If the rate should be too high and the employees can too easily make an unusual wage they will ofttimes slack up for fear their employer will find out he is paying too much and cut the rate.

I have personally known of old employees coaching newcomers and warning them that they must not turn out over a certain amount of work for fear the rate should be cut.

On the other side there are some few plants that set the rate so low that no employee can make a living, but I am inclined to think they are an exception rather than a rule.

Bill covers the subject very thoroughly when he says, "when all is said and done straight time gives quality and if the overseer is any good he will see that quantity is produced." K.M.S.

Editor, Overseers' Round-Table:

IF I am informed right the General Electric Co. and other large concerns have attained great success with piecerate systems even to washing floors, windows, etc. Even the complicated designing and tool making is on standard rate basis.

The basic principle of piecerate payment is probably that of extra payment for extra effort, over that of a standard unit of work for a given period of time. Honesty of purpose is the first essential both from the management and the worker. Rates are established after a comprehensive study and they must be guaranteed for a period of time. Then the skill of the worker can be brought out. Of course, the worker must know at the start that quality must not suffer for quantity and that inspection plays a big hand in the scheme. When, through no fault of the worker, the output is spoiled, fair play must prevail.

When a worker invents a way to step up his work assure him a good break by giving him a bonus for it if he will make it known, even if the rate is to be cut due to his cleverness.

If you are to get full cooperation from all then the overseer must be either well paid, over and above what the piece worker is going to make, or he must share a bonus for total output.

There is no one plan suited to all mills, but a recent survey of all industries by the Sherman Corp. proves that piecework and wage incentive plans are used to a far greater extent than day wage. CHAS. H. WILLEY.

Editor, Overseers' Round-Table:

I AM *sincerely* in favor of piecerates in certain classes of work. Putting workers on time-rate does not help production and, talking from a weaving standpoint, it is entirely out of the question.

About Expressing Op

FRED, one of the younger overseers, waited for Pete at the mill gate.

"Pete," he said falling into step, "I've sort of been wondering about you and, if you don't mind, I'd like to ask a few questions."

"I'm not much of a mystery," Pete grinned, "and I don't recall having a horrible past, so do your worst."

"Well," Fred spoke slowly, "I see you get up in these overseers' meetings and say what you think about this or that, regardless of whether anyone else likes it or not. Then I've seen you arguing with Chase about different things and I've even heard you speak right up to the treasurer one day. I don't want to criticise, Pete, but do you think that you are doing the right thing?"

"Doing the right thing?" Pete was puzzled for a minute. "I certainly see nothing wrong with it."

"It's like this," Fred explained. "I want to know what course to follow myself so I'm trying to get your views. What I'm trying to get at is that I have an idea that you, and all the rest of us, would be better off if we piped down a little more when one of the bosses is around and didn't go looking for an argument."

"I get you," Pete replied. "You wonder whether it isn't better for an overseer to seem to agree most of the time so that he will be in good with his boss. I can see your point, Fred, but I think that it is a little old-fashioned. Back in the days when a magic lantern was the latest word it might have been a good idea to soft-soap the boss, but those days are gone. What the bosses want today is men who speak up."

"You may be right," Fred came back, "but when you spoke of the old days you set me to wondering. Human nature hasn't changed, and if the bosses wanted to be soft-soaped in the old days they still want to be soft-soaped. The only difference is in the way you lay on the salve. I have an idea that a

Opinions

lot of these so-called broadminded fellows only want to *start* an argument with them. They listen like a broadminded person should and then prove that you are wrong—and you'll find that you'll get in very dutch if you don't admit the error of your ways very quickly. I think that an overseer is wise if he doesn't put his own opinions forward too much. If he disagrees with the super about something he had best keep quiet. If he wants to get an idea across he has to be careful and make it appear as though some of the idea was the super's. I think that the diplomatic way is to keep in the background as a bright person with lots of suggestions, but no violent opinions."

"I don't agree with you at all," Pete replied. "If I disagree with something the super orders or says, I certainly wouldn't go around spouting to the help about it, but I certainly wouldn't be afraid to speak up in open meeting or to the super alone."

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Do *you* believe that it is wise for an overseer to express opinions contrary to those held by the super or management?

Overseers and others are invited to discuss this and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

The writer has had considerable experience in fixing rates. In a weaving mill in New England and he had to put the weavers on time-rates when starting up as these were 50 loom sets and the mill in question had been entirely revamped. Production was very poor and he decided to put the weavers on piecerates, but the plan struck a snag with the management and he was called up on the carpet for further enlightenment. It was the contention of the management that the looms had not been broken in sufficiently and that we would lose hands.

The discussion was pretty hot for a few minutes, but I succeeded in having them see my point of view and they told me to go ahead. I informed the weavers, taking care to explain the benefits they could derive, namely, a larger pay envelope. They got into it with more determination and spirit, for they knew a loom stopped was also a stoppage in the pay envelope. It soon showed up that the production went up with piecerates.

I am also in favor of loomfixers getting their pay based on sectional production. It avoids a lot of unnecessary loom waiting, for here also the fixer would know that a stop counted against him as well as against the weaver.

HENRY F. HORN,
Franklin Weaving Co.

On Health of the Mill Worker

Editor, Overseers' Round-Table:

No, I CERTAINLY do not consider the average textile worker mentally inferior to his brother in other industries. If he is it is a bad job for the trade as overseers, supers, agents and other officers are made, in the majority of cases, from workers who have come up from the bottom and earned advance through intelligence. These men have to carry on the textile business and if their mentality is not on a par with that of men in other lines of business then I say it is a bad job for the trade.

The percentage of students in technical schools in the textile division is greater than in any other division, even female help participating.

From the physical standpoint we may appear below the average, due no doubt to the atmosphere of the mill, particularly dusty card rooms and some highly humidified weave rooms. There is also the heavy work and high speed prevalent in mills today as compared with other industries. Energy is about spent at the end of the day, particularly in the picker room where men have to exert up to 12,000 ft.-lb. of energy each day. Who wouldn't look physically worn out?

A. COOPER.

Scrubbing Floors

Editor, Overseers' Round-Table:

WITH REGARD to scrubbing the floors, I think neither the overseers nor the superintendent should be responsible for supervision. An overseer has more responsible duties to be fulfilled and it is too much to expect him to perform this additional duty well. Moreover, by not holding the overseer responsible he will be more free to do his own work more efficiently, which will pay in the long run. Likewise, if the superintendent is freed from such minor worries he will be able to utilize his precious time to better advantage.

The best thing is to have a scrubbing team, with a supervisor who should be held responsible for any neglest or bad work. A mill can well afford such a scheme and it is for its own good.

P. B. JOSHI,
Bombay, India.

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Summary of Discussion On Piecerates

Slightly over 75% of the contributions were in favor of the piecerate system of payment and believed that it should be extended wherever possible. Principal argument was that it was the fairest method of payment for both employers and employees and it was stated that adequate inspection and supervision would insure good quality. Those opposing the system believed that it placed too much emphasis on speed and that real quality work could not be secured from a production-minded organization.

Expect Full Daytime Operation of Textiles, Inc., Mills in January

FULL day-time operation of the 21 plants in their organization after Jan. 1 was predicted by A. G. Myers, president, and J. H. Separk, executive vice-president, Textiles, Inc., Gastonia, N. C., in a joint statement made last week. It was felt that their combed yarn mills would be able to run on full single shift basis for 10 to 15 weeks if their customers will provide shipping specifications for existing contracts.

The statement issued by the executives of Textiles, Inc., and its sales subsidiary, Textiles-Incorporated Sales Co., was as follows:

"Stocks and shelves are depleted, and they must be replenished. Retailers and converters, manufacturers and jobbers are in the same position in which many individual buyers found themselves—they have been buying from hand to mouth and find themselves low in stocks and with empty shelves.

"All we need is a restoration of courage and confidence; 90% of the trouble with the country today is psychological. If a simultaneous buying movement to empty shelves and stockrooms of local merchants could be started, its effect would be electrical.

"It would mean that the wholesalers and jobbers would have to start to fill their stocks, and that would mean that the mills would all be running again. It all comes back to the individual. We believe that with the turn of the year, there will be a return of this courage and confidence."

Commenting further on the present situation, in so far as its effect upon their own organization is concerned, Mr. Separk, who is president of Textiles-Incorporated Sales Co., said:

"We have one of the most thorough sales organizations in the industry, having our own representatives in the principal yarn buying centers of the country. We are effecting sizeable economies in all departments of the organization, and, when full-time operations can be resumed, under the consolidation, we feel that approximately $500,000 annually will be saved over the former operation of the mills as individual units. With these economies and superior distribution of our output, it is not unreasonable to expect, in the not distant future, that our stockholders will reap benefits in dividends."

A later statement to the effect that the mills will not run at night appears on page 19.

▸ Silk Employment Shows Fractional Increase

A fractional increase in employment in the silk industry during November as compared with the previous month is reported by the Silk Association of America, Inc. November employment was 9.4% lower than the same month of last year. Broad silk loom employment decreased 1.6% and spinning spindle employment increased 3.0% as compared with October, 1931. Machinery operations during November decreased 9.8% for broad looms as compared with the previous month, while spinning spindle activity remained the same.

▸ Paterson Silk Show Nets $2,500 Profit

Profits of $2,000 to $2,500 have been reported from Silk Industry Week recently held in Paterson, N. J., by the Chamber of Commerce of that city. The National Silk Convention and the Silk Institute events were a loss, and the above figure represents the net profit from the Machinery Exposition after deducting deficits of the convention and institute.

Women's Hosiery Finds Ultimate Use in Eel Catching

"Of all the various uses made of cast-off silk stockings, the most unusual to come to light is that made of them by the eel fishermen of Nova Scotia," says J. Earl Ruthardt, of the Berkshire Knitting Mills, Wyomissing, Pa.

"Living in a land where the high tides of the Bay of Fundy rise and fall, these fishermen place a barrel containing pieces of pork, or similar bait, at the bottom of a creek at low tide.

"The top of the barrel is hinged and clasped securely, but the side has a hole in it. To the rim of this hole is tacked a lady's stocking minus the toe-piece.

"The stocking drifts inside the barrel so as to form an easy entrance, but an impossible exit for the eels, which squirm in for the bait and pack themselves in the barrel by the dozens.

"At the next low tide the fishermen have only to open the top of the barrel and extract the catch."

▸ Durene Letter to Stores Stresses Knit Fabrics

The possibilities of Durene cotton fabrics as leaders for the wash goods departments of stores, are stressed in a holiday letter sent out to retailers throughout the country by Ernest L. Starr, director of the Durene Association of America. Mr. Starr particularly emphasizes rough-surface goods, mesh effect in woven fabrics, and lace goods, and he encloses with his letter samples of Durene outerwear fabrics for the spring season.

The samples include: white lacy mesh with ribbed effect, flecked yellow-and-black jersey, embroidered batiste, trellis mesh, two lace fabrics, one orange and one white, and a particularly interesting cotton and wool knit sample. The mercerized yarn, the letter states, lends itself pleasingly to a combination with wool in knitted outerwear.

Commenting on the popularity of Durene cotton lace, Mr. Starr writes:

"These laces are being used by the finest New York dress houses for evening and informal dinner gowns and softening lingerie touches on daytime dresses."

▸ Waterman, Currier & Co. to Have New Boston Office

Shortly after Jan. 1, Waterman, Currier & Co., Inc., cotton yarns, will move its Boston office from 78 Chauncy St. to 115 Chauncy where practically the entire top floor will be occupied. In addition to providing a larger amount of floor space, the move will enable the company to lay out departments so that the work can be carried on with greater efficiency. All the billing and accounting of the organization is centered in Boston. Space for complete yarn testing is being provided for and apparatus installed.

Company officials state that, despite the unsatisfactory price situation, progress during the last year has been gratifying and that they are looking to the future with confidence. They believe that investment in office space and equipment at this time will show good dividends and have purchased new office furniture for their new home.

▸ New N. J. Throwsters Ass'n Elects Officers

Isaac Benjamin, of the Hercules Throwing Co. and Abe S. Berliner, of the Philip Berliner Co. have been chosen president and vice-president respectively, of the Throwsters Association of New Jersey, recently organized in Paterson, N. J.

The election, which took place in the offices of H. Kermit Green, attorney, who had served as temporary chairman since the original projection of the organization plan, resulted also in the following officials being chosen: Frank Gatti, treasurer; Robert A. Scher, secretary; H. Kermit Green, counsel; Frank Gatti, chairman; George Lewis, A. S. Berliner, J. Palma, E. Green and Max Bornstein, steering committee; Abe S. Berliner, chairman, and Robert A. Scher, publicity committee.

▸ Gotham English Sales to Clear Through Montreal

Gotham Silk Hosiery Co., of New York City, is making arrangements to transfer its English sales department from New York to Montreal, Que. The firm has already established a Canadian branch mill at St. Hyacinthe, Que.

Jack Card Offers a Joke—Without Explanation

Editor TEXTILE WORLD:

Santa Claus brought me a new joke.

A clothing manufacturer was demonstrating the proverbial seller's weakness to a buyer who in turn was displaying customary firmness.

Finally, an order was closed, whereby a line of $15 suits went at $7.50.

Just as the buyer was leaving, he turned and said: "By the way, I don't want that cotton lining in those suits; you've got to put silk in." The seller agreed. "And furthermore," continued the buyer, "I want a better grade of fabric than that sample." Once more the seller was willing. "Those buttons are pretty cheap," went on the buyer; "I want better ones." "Alright," said the weary seller.

"And say, how about a little better workmanship?" asked the buyer.

But here the seller stiffened. "Not on your life," he replied firmly; "I have to pay for labor."

JACK CARD

▸ Materials-Handling Group Organizes Association

At a meeting held in Cleveland recently and attended by over 70 representatives of materials-handling equipment manufacturers, an organization to be known as Materials Handling Institute was formed, the object of the association being primarily educational to promote a more intense mechanical-handling consciousness in the minds of industrial executives, also to promote better understanding of the relationship in a cooperative way between the various groups.

The following officers were chosen: F. E. Moore, Mathews Conveyor Co., president; J. B. Webb, J. B. Webb Co., vice-president; H. W. Standert, Northern Engineering Works, treasurer; J. A. Cronin, Materials Handling & Distribution, secretary.

A board of governors was elected, one representative from each of the following groups of manufacturers: Hoist and cranes, continuous conveyors, floor trucks and castors, industrial trucks and tractors, crawler cranes, accessories, gravity conveyors, portable conveyors, lift trucks and skids, transmission and monorail.

This group of governors were given authority to add to their number as they see fit after making a study of the industry groups in more detail. The board of governors and officers were given power to choose various committees, including constitutional and by-laws committee, publicity, educational, etc. The meeting adjourned to the week of May 2 to 6 during the American Foundrymen's Association meeting in Philadelphia.

London Fair to Highlight Broad Range of British Textiles

THE British Textiles Exhibition which opens at the White City, London, on Feb. 22, and continues until March 5, will be a new and important unit in the British Industries Fair. There, for the first time, the visitor from overseas will find concentrated under one roof the full range of Great Britain's textile products; cotton and wool, rayon, silk and linen—fabrics, yarns, smallwares and apparel — produced by five great industries and a thousand factories.

Lancashire will show her newest range of cotton and cotton mixture fabrics, from crepes and fine voiles, to plushes and heavy furnishings. Yarns and plain cloths will be represented by leading firms, while gloves and handkerchiefs, underwear, gowns, overalls and sportswear and many another finished article for personal, household or commercial use, will be displayed.

In the rayon section the latest production in both high and low lustre fabrics and yarns will be displayed by the best known British firms. Woolens and worsteds will take an important part. The National Association of Scottish Woolen Manufacturers as well as individual Scottish and Yorkshire makers will exhibit wide ranges of tweeds, cheviots, West of England cloths and fine dress goods both in the piece and in finished garments.

In the pure silk section velvets and woven tissues, neckwear, hose, lingerie, scarves and gowns of distinctive coloring and design will present a wide range of choice to the buyer. Irish linens too, from the most inexpensive fabrics to fine cambrics and hand-embroidered damasks will form a noteworthy display, while smallwares, millinery and Nottingham lace will each make their special appeal.

The exhibition will be extensive. Two miles of stands occupying 100,000 sq.ft. have been taken. The fashion parades, held three times daily, will be a brilliant feature. They too will be larger than any previously held; over 700 garments will be shown.

The fashion theatre will occupy 14,000 sq.ft. of floor space. It has been planned so as to give the greatest possible assistance to buyers in judging both gowns and fabrics. The display will comprise morning, afternoon and evening wear, sports wear and lingerie, in infinite variety; over seven hundred garments will be shown.

The fabric designs and colorings will be the most modern. British art will predominate, but nearly all the leading European designers will be represented.

In addition to dress goods and gowns of cotton, worsted, rayon, silk and linen, there will be many other types of fabrics. In furnishings and draperies a tremendous range will be shown of pure and mixture fabrics, plain, dyed and printed, together with Nottingham lace. In household goods there will be everything from bath towels to linen sheets and rayon counterpanes, and from a duster to a detachable garden chair cover.

Men's wear will be well represented, by shirtings ranging from exclusive striped poplins or Sea Island cotton fabrics, to simple prints, as well as the suitings.

▸ Blue Chief Spring Color

The spring color card of the Textile Color Card Association comprises 78 new shades. In addition to the basic colors for townwear, there are special groups of pastel tints and brilliant hues, especially adapted to sports, beach and evening wear, as well as contrast notes to the darker costume colors. The fashion outlook for Spring, it is stated, is undeniably blue—and to suit this smart mood, there are gay, vibrant tones and swagger, nautical blues. Reds and greens also are important.

▸ November Cotton Production 3% Above Last Year

The production of cotton cloth in American cotton mills during the month of November, 1931, amounted to 494,365,000 sq.yd., according to an estimate of The Association of Cotton Textile Merchants of New York, basing its calculation on the report of spindle hour activity released by the Bureau of the Census of the Department of Commerce. This compares with an estimated output of 479,351,000 sq.yd. in November, 1930. The month this year was therefore 3% ahead of a year ago.

▸ Parrish Fashion Clinic Starts Jan. 11

Vital problems are coming up for discussion and settlement at the Fashion Merchandising Clinic opening in New York, Jan. 11, under the direction of Amos Parrish. These clinic sessions, of which there have been seven held during the last four years, were inaugurated by Amos Parrish with a view to giving retail merchandisers and buyers going to market for fashion merchandise a clearer, definite picture of best-selling profit-yielding fashion types, and the most profitable ways of selling them. Included in the examinations are coats, dresses, millinery, shoes, hosiery, gloves, handbags and jewelry.

▸ Fujimura Co. Name Changed

Stockholders of H. Fujimura & Co., Japanese silk importers, New York, have voted to change the name of the company to the Maruya Corp., it was announced last week. The firm stated that "no other change in the company's affairs has occurred or is contemplated."

NEWS about MEN

V. P. Hattemer, president of the Vulcan Silk Co., Alpha, N. J., has been elected chairman for 1932 of the Commission Throwsters Division of the Silk Association of America, Inc., and **R. B. Baird,** president of the Avoca (Pa.) Silk Co., has been elected vice-chairman. The executive committee of the division includes the two above officers and in addition: **George Friedlander,** Duplan Silk Corp., New York; **J. H. Gritman,** Universal Industrial Corp., Berwick, Pa.; **Paul Hemmerich,** Duffy Silk Co., Brooklyn; **T. H. Mueller,** Laros Silk Co., Bethlehem, Pa.; and **H. A. Reiling,** H. A. Reiling, Inc., Gouldsboro, Pa.

W. G. Cluett has been elected a director of Cluett, Peabody & Co., Troy, N. Y., to take the place of **E. A. LaFleur** of San Francisco, resigned. **W. C. Mullally,** who joined the company in 1914, has also been elected a director, to fill a vacancy caused by the resignation of **W. C. Morgan,** last August. Mr. Cluett is the son of **E. Harold Cluett,** chairman of the board, and has been manager of the Los Angeles salesroom; on Jan. 1, however, he becomes sales director of the Pacific Coast division. Mr. LaFleur, whose place he takes as a director, will remain with the company as manager at San Francisco.

Dr. Fritz Bluethgen, director of American Bemberg Corp., and American Glanzstoff Corp., New York, has been made a member of the board of directors of the International Viscose Co., a holding company for N. V. Hollandsche Kunstzijde Industrie Breda. Other new members include: **Prof. van der Vooys,** of Arnheim, Holland; **F. H. Fentener van Vlissignen,** president of American Enka Corp.; **A. Waller,** and **Dr. van Ryckevorsel,** both members of the board of N. V. Hollandsche Kunstzijde Industrie Breda.

Ernest C. T. Bick, president of Bick & Co., Inc., Reading, Pa., and Mrs. Bick, sailed for an extended European tour last week. They will visit Germany, of which country Mr. Bick is a native.

James T. Broadbent, president of Standard Textile Products Co., New York, is expected back from Europe, Jan. 3.

Joseph Silver, active piece goods factor and president of Piece Goods Buyers' Association, who has just joined Cheney Bros. sales staff

J. R. Sablow, secretary of the Artistic Dyeing Co., Brooklyn, N. Y., has sailed on a cruise to the West Indies.

J. S. Whitman, manager of William Hollins & Co., Inc., which recently acquired the former Forestdale (R. I.) Mfg. Co., has gone to Europe where he will remain for about three months. While abroad he will visit the plants of the company in England, which make Clydella and Ciuyella goods such as are to be manufactured at Forestdale.

J. W. Kelly, general manager, Pelzer (S. C.) Mfg. Co., of the New England Southern Corp., has resigned, effective Jan. 31, and will retire from the textile industry. He recently purchased a home in Anderson, S. C. Mr. Kelly became overseer of spinning in the Pelzer Mill No. 4 in 1909, and was gradually promoted until he became general manager of the company in 1923.

A. A. Moore, of Albemarle, N. C., has been made general manager of Crescent Knitting Mills, Statesville, N. C.

John McKay Adan, formerly of the Crombie organization, Scotland, has joined the force of the Worumbo Mfg. Co., Lisbon Falls, Me.

Dr. John H. Haerry has resigned as manager of dyeing and finishing at the Crompton (R. I.) Co. as the result of injuries sustained when he fell from a horse and broke a vertebra. He will be in the hospital for several weeks. **H. A. Matheson,** his assistant, has taken over the duties of manager.

Phillip Williams, of the DuPont Rayon Co., Buffalo, N. Y., has been elected a member of the board of the Buffalo Safety Club, at the annual meeting of the organization, for a two-year term. The club is sponsoring accident prevention campaigns in the larger industries of its district.

Murray Field, formerly of Anniston, Ala., has become production manager of Lillian Knitting Mills, Albemarle, N. C.

A. LeRoy Lightner, after four years of service as southern representative, and 10 years as manager of the New York office, has returned to the plant of the Narrow Fabric Co., Inc., Reading, Pa., as assistant sales manager.

Textile Calendar

Wool Blanket Manufacturers Quarterly meeting, New York, Jan. 14, 1932.

Textile Forum, N.A.C.M., for master mechanics, Chamber of Commerce Bldg., Boston, Mass., Jan. 14, 1932.

Annual Dinner, Silk Association of America, Waldorf-Astoria Hotel, New York, January 21, 1932.

U. S. Institute for Textile Research, meeting of Research Committee, Chemists' Club, New York, Jan. 21, 1932; meeting of Executive Committee and Board of Directors, Jan. 22, 1932.

Textile Forum, N.A.C.M., for overseers of warp preparation and weaving. Chamber of Commerce Bldg., Boston, Mass., Feb. 11, 1932.

Textile Forum, N.A.C.M., for overseers of dyeing, bleaching and cloth room, Chamber of Commerce Bldg., Boston, Mass., Mar. 10, 1932.

Committee D-13, American Society for Testing Materials, Spring Meeting, Providence, R. I., March 10-11, 1932.

Annual Meeting, Silk Association of America, 468 Fourth Avenue, New York, March 23, 1932.

National Association of Hosiery and Underwear Manufacturers, Annual Meeting, Commercial Museum, Philadelphia, Pa., April 14, 1932.

Knitting Arts Exhibition, 28th Annual Show, Commercial Museum, Philadelphia, April 11 to 15, 1932.

Textile Forum, N.A.C.M., General Meeting for agents and superintendents, Chamber of Commerce Bldg., Boston, Mass., April or May, 1932. (Date is to be announced later.)

Second National Cotton Week, nation-wide promotional campaign, May 16 to 21, 1932.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 17 to 22, 1932.

J. **C. Cowan, Jr.,** assistant general superintendent of the Burlington (N. C.) Mills group of weaving plants, has been appointed plant manager of the Rayon Fabrics Corp., and the United Throwing Co., two units of the group which are located at Elon College, N. C., six miles from Burlington.

Henry R. Pinckney, assistant superintendent of the Lincoln Bleachery & Dye Works, Lincoln, R. I., has assumed management of the plant, succeeding **John G. Whittaker,** who is retiring because of ill health after serving 15 years as superintendent. Mr. Pinckney has been assistant superintendent since 1917.

Paul W. Douglass, with Ridley Watts & Co., New York, for many years until it dissolved about a year ago, joined the staff of F. H. Cabot & Co., New York, on Jan. 1. For the last year Mr. Douglass has been connected with the North Star-Wamsutta sales organization. For six of the 18 years he was with Ridley Watts he was in charge of the Boston office and New England territory.

G. Harold Walker has severed his connection with the Grosvenor-Dale Sales Corp., New York, agent for the plant at North Grosvenor Dale, Conn.

V. L. Allaire is severing his connection with Pacific Mills, Boston, as head of the rayon wash fabrics department. The rayon lines will be carried in the regular wash fabrics department.

S. Walter Spielberg, formerly with Sherr Bros., New York, is covering the cutting-up trade for Cohn Hall Marx Co., New York. **Joseph Heitler** will cover the retail trade in the Los Angeles district for the company.

B. E. Geer, who has resigned as treasurer of the Judson Mills, Greenville, S. C., as reported in these columns last week. Mr. Geer was connected with the Judson company as president and treasurer from 1913 until 1927 when it was sold to Deering, Milliken Co., New York. Before entering the textile industry, he was a member of the faculty of Furman University, from 1896 until 1911. Mr. Geer's current textile mill connections are: president and treasurer, Roswell (Ga.) Mills, Inc.; president, Southern Worsted Corp., Greenville, S. C.; president, Piedmont Processing Co., Belmont, N. C. (formerly the Thies Dyeing & Processing Co.).

S. C. Hatch, in the fabricating department of the Ware Shoals (S. C.) Mfg. Co., for several years, has resigned, effective Jan. 1, to accept a position with the Riverside & Dan River Cotton Mills, Inc., Danville, Va.

J. H. Puckett, formerly overseer of cloth room, Stonecutter Mills Co., Spindale, N. C., has been transferred to overseer of weaving at the same plant, succeeding **E. B. Cobb,** who recently resigned to accept a position with another company. **O. C. Smith** has been made overseer of cloth room to succeed Mr. Puckett.

William Walsh, formerly with the Mayo Woolen Mills Co., Inc., Millbury, Mass., has gone to the Globe Mills, Utica, N. Y., as overseer of dyeing.

Richard Whelan, formerly second hand at the Whitman Mills, New Bedford, Mass., has gone to the Bates Mfg. Co., Lewiston, Me., as cloth inspector in the weave room.

A. L. Whetstone is now night superintendent of the Tupelo (Miss.) Cotton Mills.

C. L. Leopard, formerly head of the weaving department of the Hermitage Mills, Camden, S. C., now holds a similar position at the Rhodhiss (N. C.) Mills Co.

H. H. Ellington, formerly of Knoxville, Tenn., is now head of the weaving department and the cloth room of the Dale Cotton Mills, Ozark, Ala.

J. W. Simpson, formerly of Bladenboro, N. C., is now overseer of carding at the Anchor Mills, Huntsville, N. C.

C. C. Greer has become head of the cloth room of the Jefferson (Ga.) Mills.

Obituary

Emmanuel Hey

Emmanuel Hey, retired woolen manufacturer, died Dec. 22, at his home in Lansdowne, Pa., aged 73 years. Mr. Hey was born in Heyville, Delaware County, Pa., of an English family, which settled in the United States in 1800 and engaged in woolen manufacture. For many years he operated a mill in Manayunk, Philadelphia, but retired a number of years ago. Mr. Hey was an honorary member of the Radnor Hunt Club, member of the Rose Tree Hunt Club, Corinthian Yacht Club, the West Chester Country Club. He was a member of the race committee of the American Jockey Association. He frequently acted as judge at horse shows and took great interest in fox hunting and yachting. He is survived by two daughters and a son, Berry Hey.

George F. Haskell

George F. Haskell, aged 40 years, assistant treasurer of the Norwich (N. Y.) Knitting Co., died at his home there after an illness of several months. Mr. Haskell was a native of Hyde Park, Boston, Mass. Prior to becoming associated with the Norwich Knitting Co. he was cost accountant with the Norwich Pharmacal Co. During the World War he served as an ensign in the U. S. Navy. Mr. Haskell was prominent in the Knights of Columbus and the American Legion.

Maurice E. Smith

Maurice E. Smith, head of the insurance department of the Philadelphia Textile Manufacturers' Association, died Sunday, Dec. 20.

Walter L. Parsons

Walter L. Parsons, retired attorney and textile manufacturer, died suddenly at his home in Rockingham, N. C., Dec. 21, following a heart attack, at the age of 73 years.

Frederick W. McKibbin

Frederick W. McKibbin, aged 56, president of Tompkins Bros. Co., knitting machinery manufacturers, Syracuse, N. Y., died in Syracuse Memorial Hospital, after a long illness. Mr. McKibbin was a partner in the knitting machine business with W. A. Ingalls; he went to Syracuse 12 years ago. He was a graduate of McGill University and had studied engineering at Cornell University. A native of Ireland, Mr. McKibbin came to this country in his youth. He was active in Rotarian and Masonic circles.

Walter Bindschaedler

Walter Bindschaedler, who retired last year from the treasurership of Schwarzenbach, Huber Co., New York, after 40 years of service with the company, died last Sunday night after a brief illness. He was about 60 years old. Mr. Bindschaedler was also credit manager of the company and was well known among the credit men of New York. He is survived by his widow, three daughters and one son.

Miles Eugene Rogers

Miles Eugene Rogers, 43 years of age, assistant superintendent of the Equinox Mills, Anderson, S. C., died on Christmas day at his home there, following an attack of pneumonia. He went to Anderson 13 years ago from West Stoughton, Mass.

NEWS about MILLS

Cotton

Powdrell & Alexander, Inc., Danielson, Conn., have started 100 more looms at their local plant, bringing production up to 60% of the normal capacity. The company's new branch plant at Kansas City, Mo., is producing at the rate of 1,000 pairs of curtains daily and is the fourth branch opened in 1931, the others being at St. Louis, Seattle, and Chicago. The branch plant at Kansas City operates under the name of **Powdrell-Hunt Co.**

***Clark Thread Co.,** Austell, Ga., has begun preliminary operations at its new mill, recently completed at a cost of more than $1,500,000, and propose to have the plant on close to full production basis early in January.

Jefferson (Ga.) Mills have advanced production and are now running on a full day and night schedule in all departments with a regular working force.

Walton Cotton Mills Co., Monroe, Ga., recently purchased four circulating winders, having a total of 400 spindles, from the Abbott Machine Co., Wilton, N. H. Two units of high speed warping are also being installed for operation in connection with the Abbott winders.

Washington Mfg. Co., Tennille, Ga., reports the overhauling of machinery, preparatory to resuming operations the first of the year, after being closed since last September.

Puritan Mills (Swiss Textile Co.), Assonet, Mass., have been leased by Ernest J. Watters and Joseph Bloomberg for two years and will be opened shortly.

***Conanicut Mfg. Co.,** Fall River, Mass., has been incorporated with 500 shares of capital stock, no par value. The incorporators are Leo Dane, president, Jacob Friedberg, treasurer, and Anna C. Maquire, of Boston. The corporation was formerly the **Conanicut Mills.** Much of the original machinery has been disposed of.

Firestone Cotton Mills, Fall River, Mass., expect to operate through the winter on a three shift schedule, hiring more than the usual force.

Estates Corp., Newton, Mass., owner of part of the **Prescott Mills** group of the old **Mass. Cotton Mills Corp.,** Lowell, Mass., has contracted for the razing of the six-story mill building.

Cape Fear Mfg. Co., Fayetteville, N. C., recently organized by Spurgeon Kinslaw and associates, has taken over the Fayetteville plant of the **Cape Fear Cotton Mills, Inc.,** St. Paul, N. C., and will operate it some time in the future. Mr. Kinslaw will be president of the new company; J. W. Butler is secretary and treasurer.

Textiles, Inc., Gastonia, N. C.—The twenty-one mills of the company began full time operations the first of the year, according to a joint statement issued by A. G. Myers, president, and J. H. Separk, first vice-president. Orders in hand assure a continuation of this schedule from 10 to 15 weeks, and belief is held by the officials that additional business received in the meantime will warrant its indefinite extension. If customers will provide the necessary specifications, enough business is on the books to insure full day time operations.

Proximity Mfg. Co., Greensboro, N. C. A bonus, from $5 to $15, has been paid to employees of the company, totaling $20,000. Following the holiday closing, all units resumed a five-day schedule.

Somerset Mills, Inc., Roxboro, N. C., have arranged for a change of company name to **John Watts Sons Co.**

Carolina Cotton & Woolen Mills Co., Spray, N. C. The Carolina Cooperative Council, an organization of nearly 400 men from the various plants of the company, held their twelfth annual Christmas banquet at Spray, on Dec. 23.

Mt. Hope Mills, Inc., Warren, R. I., closed Dec. 21 for an indefinite period.

Southern Weaving Co., Greenville, S. C., has taken out a permit for a one-story bleachery and dye house at its mill in the City View district, about 40x63 ft., and will proceed with superstructure at once. General contract for erection was recently let to the Gallivan Building Corp., Greenville.

Wool

Goodall Worsted Co., Sanford, Me. A rumor has been heard to the effect that the Goodall company may establish a unit for the manufacture of clothing at the Springvale, Me., branch.

Windham Mfg. Co., South Windham, Me., will not function again as a textile plant. All the modern machinery and most of the general equipment will be moved to mills at Rochester, N. H., and Ware, Mass., and the water power rights have been sold. Although the mill has not operated for three years, the agent, Frederick W. Freeman, now manager of the New England Guild at Portland, Me., has been retained and watchmen employed. A large brick addition and new boiler room were built on only a few years ago. There remains at the plant some old machinery and other equipment that will not be moved at present.

Lawrence (Mass.) Industries Co. is the name of the group which purchased the **Lawrence Dye Works** and the **Uswoco Mills** of the old United States **Worsted Co.** It is expected that operations at the dye works will be started under the supervision of Ivar L. Sjostrom, North Andover, who ran the plant for many years before it was taken over by the U. S. Worsted Co. The Uswoco mill will be started as soon as another company can be formed for the undertaking.

Hamilton Woolen Co., Southbridge, Mass., is running on a five-day-week schedule, with close to normal working quota.

Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has purchased from the Westinghouse Electric & Mfg. Co. equipment to increase the output of the mill's power plant. This includes a turbine generator, a surface condenser, two air pumps, two condensate pumps, a 15 hp. motor for driving pumps, one impulse type turbine for driving pump, and a 12-panel switchboard.

***Cleveland (Ohio) Worsted Mills Co.** will soon begin the erection of a one-story mill at Ravenna, Ohio, reported to cost close to $50,000, with equipment. General building contract has been let to the Frank Construction Co., Ravenna.

Premier Worsted Mills, Bridgeton, R. I., which have been operating three days a week, have gone on a full time basis, with orders which will keep the plant running for some time at that rate.

***Stillwater Worsted Mills,** Harrisville, R. I., have begun the construction of a new addition to their branch plant at Goshen, Va., for which general contract recently was let to the John Pettijohn Co., Lynchburg, Va. Lockwood, Greene Engineers, Inc., Charlotte, N. C., are architects and engineers.

Uvalde, Tex. Directors of the Texas Angora Goat Raisers' Association, Uvalde, are considering the establishment of a new mohair textile mill. A committee has been appointed to investigate the project and secure estimates of cost, including Frank O. Landrum, Robert Davis and Samuel F. Cooper, Uvalde.

***Bedford-Johnson Co.,** Lynchburg, Va. One unit will be transferred to the Hercules Clothing Co., at Columbus, Ohio, which purchased the Lynchburg plant last summer. Morris Ressler, president of the Hercules company, has stated that operations would be carried on as before. The transfer will, however, cut the number of required operatives from 500 to about 300.

**Indicates previous mention of project.*

Knit

Gotham Silk Hosiery Co., Dover, N. J., is curtailing production in its finishing department, and about 100 operatives have been released from that division until further notice.

American Underwear Mfg. Co., Allentown, Pa. A steel beam supporting the fourth floor in the plant, tore loose from its fastenings and fell on some knitting machines on the third floor. This pressure caused a wooden beam supporting the third floor to give way and drop to the second floor. The wall of the third and fourth floors bulged out about half a dozen inches. Most of the employees were out for lunch at the time.

Lincoln Hosiery Corp., Philadelphia, has purchased the entire equipment of the full fashioned hosiery plant of **Henry Brown & Sons Co.,** Philadelphia. This announcement has been made by S. A. Kahman, president of the Lincoln organization. This unit, which consists of about 150 full fashioned machines, will make the third one operated by the company. As the major portion of the equipment consists of 39-gauge machines, it is understood the Lincoln Hosiery Corp. will be the largest operator of this gauge machine in the Philadelphia territory. About a year and a half ago, the Lincoln corporation purchased the equipment of the **Brentmore Knitting Mills,** also located in the building occupied by the Brown mill.

Viking Hosiery Mills, Inc., Reading, Pa., have been turned over to Thomas O. Sheckell, manager of the New York Credit Men's Adjustment Bureau, Inc., to liquidate the company for benefit of the creditors.

Massachusetts Knitting Mills, Columbia, Tenn., are increasing production at local mill and adding to the working force in various departments.

Van Dyke Knitting Co., Milwaukee, Wis. The company is busy working on a 40-hour week basis in all departments.

Silk

Southbridge, Mass. The "Enterprise Committee," headed by selectman Joseph Lefleche, is making arrangements for locating a silk mill in the Central Mills property, owned by the **Hamilton Woolen Co.** Operations are expected to start about the middle of January, although definite information has not yet been given out.

Hillcrest Silk Mills, High Point, N. C., operating 305 box looms, have lately been running on a curtailed single shift with only 175 workers. Their present plans are to change to double shift operation, reaching capacity production about Jan. 15, at which time approximately 400 operatives will be employed.

Stehlisilks Corp., High Point, N. C., operating 468 broadsilk looms, has been using 525 workers, divided between a 10-hour day shift, and a 11-hour night shift. Beginning Monday, Dec. 28, it was announced, this plant changed to three eight-hour shifts, thus giving employment to about 250 additional operatives. It was estimated that this change would increase production at the Stehli plant approximately 12½%.

H. R. Mallinson & Co., Inc., Trenton, N. J., is employing a working force of about 150 operatives, following recent resumption of production, and expects to maintain this quota for an indefinite time.

Julius Kayser & Co., New York, has contracted for the entire output, for a period of two years, of the first commercial unit of the **Furness Corp.,** Gloucester City, N. J., manufacturers of cuprammonium yarn, made by a new process. Installation of additional equipment is now under way, on which production will start early in the new year. About 1,000,000 lb. of yarn are involved in the deal, 60% 50-denier, and 40% 100-denier.

Marietta (Pa.) Silk Co. has been certified to do business in New York, and will be located at 229 West 36th St., New York City.

Rutland Silk Co., York, Pa. Harry C. Stitt, cashier of the Industrial National Bank, has been named a temporary receiver of the company. The total indebtedness is $30,837, and assets are $65,152. The company is solvent but unable to meet the demands of its creditors because of bad accounts and the condition of the raw silk market. John A. Hoober, counsel for the company, joined in the application for the receivership.

Welwood Norwich Ribbon Factories, Inc., Norwich, N. Y., will open mill employing about 150 at Murfreesboro, Tenn., as soon as machinery can be shipped from Pennsylvania. D. E. Ackryd will be manager. The plant, formerly used by the Frank Silk Mills, Inc., is of modern construction, with approximately 60,000 sq.ft. of floor space.

Miscellaneous

Hampden Automotive Products, Inc., Springfield, Mass., more than doubled their floor space, having leased 35,000 sq.ft., thus expanding their lines of automobile upholsteries, seat covers, and cognate products. The concern is capitalized at $500,000. Louis Laven is president and M. J. Schwartz is treasurer.

Peerless Fibre Co., Cohoes, N. Y., is maintaining full time day schedules in all departments.

***Adirondack Tinsel Mfg. Co.,** Hudson Falls, N. Y., has started production of rayon goods in a newly leased plant. The force will be enlarged as the business expands.

Asbestos Corp., Ltd., Montreal, Que., Canada. Plans are being consummated for a reorganization of this company, with resumption of operations.

**Indicates previous mention of project.*

Business Literature

Acid Handling. Cleveland Brass Mfg. Co., Cleveland, Ohio. Literature describing the new Acinet valve for sulphuric acid handling has recently been made available by this company. Handy reference for maintenance and chemical engineers.

Adjustable Speed Motor Drive. Reliance Electric & Engineering Co., Cleveland, Ohio. "Profitable Ways to Use Adjustable Speed Motor Drive" is the subject of a 32-page bulletin which describes various applications of the multi-speed drive supplied by this company.

Air Compressor. Quincy Compressor Co., Quincy, Ill. A brief but complete description of the model DV-80 automatic 2-phase air-cooled unit is offered in a 1-page leaflet.

Alloy Steel. Electrometallurgical Co., New York. The properties and applications of the new alloy steels produced by this company are described in detail in a 12-page technical bulletin.

Centrifugal Pumps. DeLaval Steam Turbine Co., Trenton, N. J. Single stage, double suction, centrifugal pumps of the horizontally-split casing design are described and illustrated in a recent leaflet.

Cleaning and Blending Feeder. Saco-Lowell Shops, Boston, Mass. A 16-page booklet describes outstanding features and operating principles of the new F-7 cleaning and blending feeder.

Dyestuffs. General Dyestuffs Corp., New York. Latest color card offers formulas for the application of Helindon dyestuffs to wool. 32 samples show fast-to-salt-water shades for bathing and beach costumes.

Electrical Equipment. General Electric Co., Schenectady, N. Y. Series of illustrated leaflets describe various types of electrical equipment manufactured by this company. Alternating current generators, single phase motors, synchronous motors, and single phase vertical motors and treated.

Electric Furnaces. General Electric Co., Schenectady, N. Y. 24 pages are devoted to the application of electric heat as a solution of difficult production problems. Illustrations lend interest to the bulletin.

Electric Motors. Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. Application, distinctive features, operation, and construction of the type CU single-phase motors are briefly outlined in an illustrated leaflet.

Flexible Couplings. Morse Chain Co., Ithaca, N. Y. Attractive, illustrated booklet is devoted to a complete description of the various types of flexible couplings manufactured by this company.

Furnaces. General Electric Co., Schenectady, N. Y. Two illustrated leaflets describe the bell-type and air-draw furnaces for bright-annealing coiled steel strips and for the quantity drying of steel parts respectively.

Furnace Lining and Arches. McLeod & Henry Co., Troy, N. Y. A 32-page bulletin describes the new boiler furnace-lining, walls, and arches made of steel mixture refractories. Blow-off type protectors, baffle tile, fire brick, clay tile, and fire cement are also treated.

Hard Rubber Products. American Hard Rubber Co., New York City. Recently issued, comprehensive catalog describes the various applications of hard rubber for protection purposes in the chemical process industries; 56 pages, illustrated.

Hose and Packing. Diamond Rubber Co., Inc., Akron, Ohio. New edition of mechanical catalog contains description of such new items as Defiance car washing hose, rotary driller, hose, and X-17 packing.

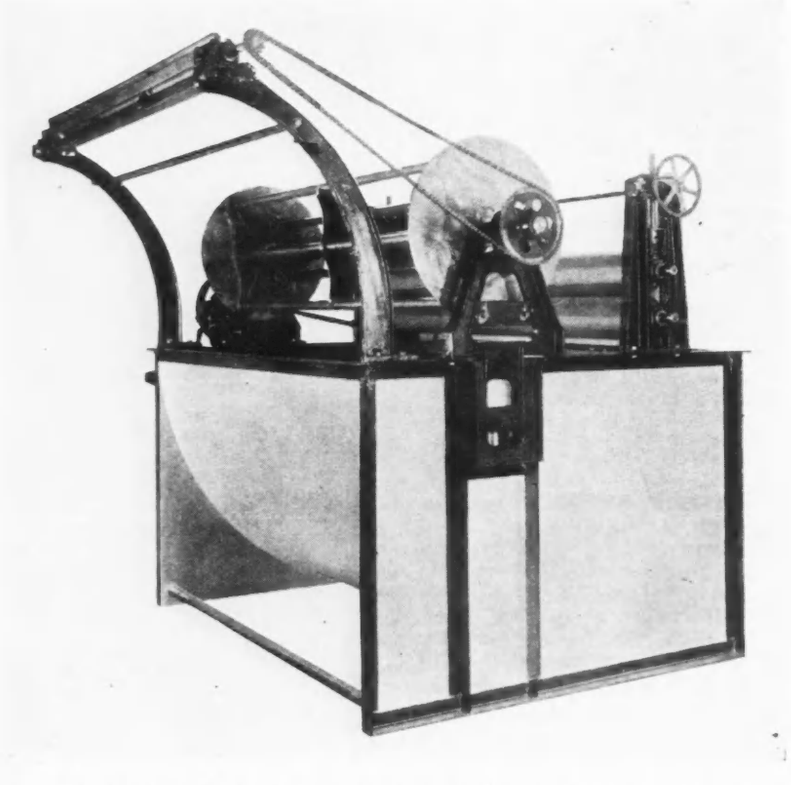
Industrial Chemistry. Foster D. Snell, Inc., Brooklyn, N. Y. "The Consulting Chemist and Your Business" is the subject of a 15-page booklet. The services rendered by analytical chemists of this company are outlined, and examples of their work are described.

Instruments and Meters. Brown Instrument Co., Philadelphia, Pa. Complete 55-page catalog deals with the various flow meters manufactured by this company. Illustrated.

Liquid Feeders. The Galigher Co., Salt Lake City, Utah. Illustrations of various machines and typical installations lend interest to a 15-page booklet which gives specifications on the new liquid feeders developed by this company.

Multiple Circulation Boiler. Combustion Engineering Co., New York. Description of the new type C-E multiple circulation boiler of the bent-tube type is offered in a recent leaflet. Specifications are included.

New Machinery *and* Processes



Piece dye tub constructed of self-supporting solid nickel-clad steel

Metal-Clad Piece Dye Tub

ANNOUNCEMENT is made by James Hunter Machine Co., North Adams, Mass., of the addition of an all-metal piece dye kettle to their new line of metal-clad units. It is constructed of nickel-steel and is stated to be stainless and leak-proof.

It is pointed out that there is no wood to rot and that it is not necessary to boil this new unit when changing colors—a thorough rinsing is said to suffice. The manufacturer states that the use of self-supporting, solid nickel-clad steel in the construction of the machine makes it unnecessary to employ numerous tie rods and braces. The false bottom and front partition are constructed of pure nickel.

A few additional advantages which are claimed for this machine are as follows: equipped with Monel main reel and delivery reel, hand-wheel adjusted 10-in. rubber squeeze rolls, heavy duty roller chain, and splash guards furnished as needed.

Silk Loom Attachments

IN ADDITION to the devices previously described in this department, Draper Corp., Hopedale, Mass. announces the installation of an improved box motion and a new type driving clutch on their models S-4 and S-5 silk looms.

Simplicity, accuracy in timing, and a design to facilitate setting are the chief characteristics of the new No. 4 intermittent gear box motion. The manufacturer states that these are the essential requirements of a 2 x 1 motion. Reference to the accompanying illustration will provide a clear understanding of the device.

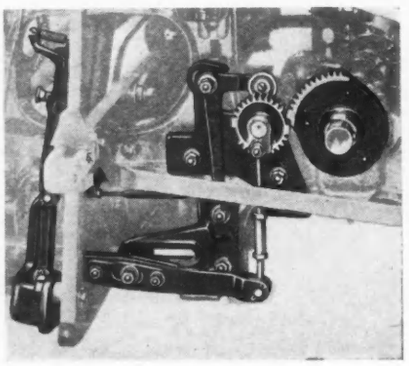
It is asserted that the most important feature of the new type of three-finger driving clutch is that it is controlled by a floating cone collar. This is said to assure an even, constant driving pressure, to eliminate end thrust, and to permit quick starting and instant release.

Air Filtering Unit

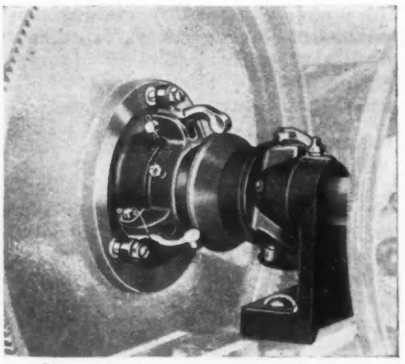
SCIENTIFICALLY treated "glass wool" is the filtering medium of the new, self-contained air filter unit announced by Owens-Illinois Glass Co., Toledo, Ohio. The new product will bear the name of Dustop and is designed as a low-cost unit for removing dirt particles from air.

It is said to be extremely simple in design, and it is pointed out that its low cost makes feasible the replacement of the entire unit when dirty. The container is of paper, which adds to the lightness of the unit and renders it readily disposable. While it weighs but 2 lb., it is stated that it will absorb dust in excess of its own weight. The flexibility of the paper container, it is asserted, establishes a tight seal between the filter and the metal frame into which it fits, thus preventing the passage of any unfiltered air around the unit.

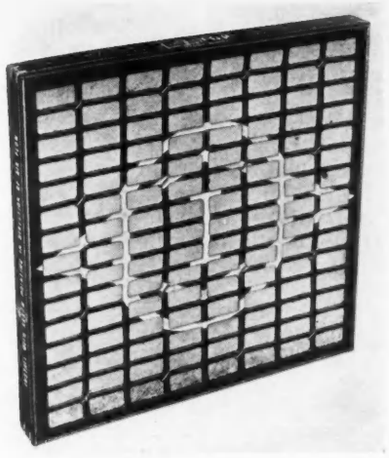
With a view to effecting further econ-



Simple, intermittent gear box motion



Three finger driving clutch with floating cone collar



"Glass wool" air-filtering unit

omies in the use of Dustop, it has been designed 2 in. in thickness, so that when a standard 4 in. pack is established by using two units in tandem, it is only necessary to replace one at a time. It is stated by the manufacturer that tests indicate that this unit will remove 99% of the dust from the air.

Fire Extinguisher

DEVELOPMENT of a new 1-gal., pressure-type fire extinguisher embodying several improvements over older models is announced by Pyrene Mfg. Co., 560 Belmont Ave., Newark, N. J.

This new model has been designed so that the operating valve is at the back instead of the front when the extinguisher hangs on a wall. This feature was designed purposely to remove the operating valve from accidental opening and to discourage tampering.

The liquid gage and air pressure gage are located directly in front where they may be clearly seen at inspection. A hanger and hook have been provided so that the extinguisher can be hung on a wall or post where it is readily accessible in cases of emergency. Another new feature is the method of locking the air storage pump piston handle to the extinguisher, permitting the extinguisher to be carried by the handle conveniently.

A feature is the operating valve which functions fully at a half turn of the hand wheel. The air chamber is large enough to insure an excess of air pressure for discharging one-gallon of fire extinguishing liquid in a rapid and forceful manner under initial pressure of 100 lb. The time of complete discharge is said to be 55 seconds, with an effective range of stream of 30 to 40 ft.

As Pyrene fire extinguishing liquid is a non-conductor of electricity, this extinguisher is said to be highly efficient and safe for electrical fires; it will not short circuit. It is also effective on fires of gasoline, oils, and other flammable liquids.

Another special feature of this fire extinguisher is the provision made for a carrying strap which can be slung over the shoulder and permits the operator to move about freely, giving full use of both hands to operate the valve and direct the stream.

It can be recharged by simply pouring in fire extinguishing liquid until the glass shows the extinguisher to be full. Air may be charged by use of the hand pump or with an air service line to 100 lb. pressure. The extinguisher is adapted for use in any climate and may be placed outdoors, since it is claimed that it will not freeze as low as 48 deg. F. below zero.

Handy Calculator

TO facilitate the solution of interior and conduit wiring problems, the Square D Co., Detroit, Mich., has developed what is known as the Square D calculator. This device is compact in size, 7 in. long, 3½ in. wide, by ¼ in. thick, fits into a case, and can be easily carried in the pocket. It is asserted that with this device, the electrical man has at his finger tips all wiring and motor data, eliminating hours of figuring and providing him with accurate data at the turn of one of three dials.

In reality it is composed of two calculators, one for computing wiring data and the other for computing motor data. The figures are protected by waterproof celluloid covering, and it is said that the operation of the contrivance is in no way complicated. It is stated that with the wiring calculator any one of the four following items may be easily calculated: amperes, feet of wire, size of wire, and per cent drop. The motor calculator gives data on the three principal types of 220-volt and 440-volt, 3-phase motors. Using the proper disk segment, set for the proper horsepower, the following data can be read: circuit switch starting fuse, conduit size, wire size, necessary running projection, and full load amperes.

Machine Mounting Material

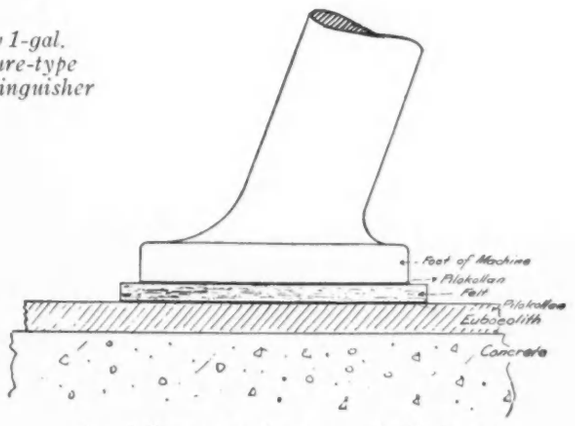
A UNIQUE method of fastening machinery to floors without the use of screws or bolts is announced by the U. S. Euboeolith Co., Inc., 45 N. Duke St., Lancaster, Pa. The material used in this process is known as Pilokollan and is described as a specially prepared, oilproof, waterproof, and compression-proof compound.

This process permits the concrete or wood floors to remain intact and prevents machine oil from seeping through and damaging goods on the floor beneath. It is said that this method of mounting insures smoother running machinery, absorbs shocks and vibrations, and reduces the frequency of repairs to the machine. It is pointed out that Pilokollan is especially adapted to the mounting of high-speed looms and other textile machinery.

Application of the material is simple, any skilled laborer being able to do a satisfactory job. It is said that machinery fastened by this process can be easily removed by heating the footings with a blow torch or by simply cutting the felt. Reference to the accompanying illustration will make clear the method of mounting.

By this method it is said that two trained laborers have fastened as many as 50 cotton looms in one day.

New 1-gal. pressure-type fire extinguisher



Specially prepared compound eliminates the use of bolts or screws in fastening machinery to floors

Device for solving electrical problems

Questions . . . *and* Answers

Uneven Cutting of Pile Fabrics

We are submitting below an inquiry received from one of our subscribers. Suggestions we have made with regard to this problem have been unsuccessful in eliminating the trouble; and we therefore present it in its original form, so that any of our readers who have a practical knowledge of this subject may give the inquirer the benefit of their experience. Replies should be addressed to the attention of the technical editor.

Technical Editor:

We are making what are known as high-pile and low-pile plain-weave plushes and have recently been having considerable trouble with these fabrics.

The top cloth is cutting in ridges as often as not; and while this is hardly perceptible at times, it is quite obvious at others. We have not, to our knowledge, made any changes in the harnesses or gears or in the tension springs for the pile yarn. There has been no alteration of the rail over the cloth under which the knife carriage travels. Neither the timing of the harnesses nor the position of the weights on the ground warp have been tampered with in the slightest. A good, clean leather break is used, and yet we still have the ribby top cloth. Rarely does the bottom cloth show any uneven cutting except when a pickout of more than a few picks has been necessary.

In remedying this trouble we wish to avoid all guess work, such as experimenting with different springs and warp tensions.

We had several plush-loom fixers give us their opinion on this, but they have been of no assistance. Our looms are of modern construction.

▼

Setting Twist in Silk

Technical Editor:

We are sending you two cops of six-thread 20/22 silk, 50 turns, of which one is right twist and one left twist. Both have been run under conditions exactly alike. The setting of the twist has been accomplished by the vacuum and steam system. While the right twist is set perfectly, the left twist shows a little more liveliness. We shall appreciate your opinion as to the cause of this difference and a remedy for it. (7750)

An examination of the sample submitted revealed the following data:

Right twist (yellow tint); twist, 51.5 turns per inch; thread, 6 (raw size—25.6 denier); nature, soft; set of twist, well set. Left twist (green tint); twist, 52.75 turns per inch; thread, 6 (raw size—25.5 denier), nature, hard; set of twist, imperfectly set, shows a tendency to kink when handling.

The only difference of note is that the yellow yarn has a soft thread and the green yarn has a hard thread, indicating soft and hard nature respectively.

The remedy will be found in rendering the hard-nature silk more pliable by changing the soaking formula, soaking it a longer time, increasing the temperature, or by a combination of the three. On silk already soaked, give the left twist one or more treatments in the steamer.

▼

Precautions in Purchasing Mesh Hosiery

Technical Editor:

In purchasing a lot of a certain gauge of mesh hosiery, what specifications are necessary in order to insure the delivery of a first-grade product? What methods can be used in checking up on the order to determine that the specified construction has not been altered or cheapened in any way? In your opinion is there much altering of construction going on in order to cheapen the goods and to meet price reductions? (7760)

In ordering hosiery, it is customary to specify the gauge or number of needles; the denier or number of threads in the silk, such as five-thread, seven-thread, etc.; the kind of tops, heels, sizes, put-up, colors; weight per dozen pairs, etc. In buying from a producer of established brands the quality is not likely to be cheapened. On the other hand, there are some concerns which practice methods of lowering quality, especially in times when prices are low. It is possible by tin-weighting the goods to secure the specified construction without using the expected weight of silk. This method is practiced somewhat in silk hosiery manufacture. Tin weighting can be determined by chemical analysis; and we are informed that it may be detected electrically by an instrument known as the electroscope. Tin-weighted silk, it is stated, will discharge the electroscope, while pure silk will not.

To avoid the delivery of cheap merchandise, we suggest that standards be set up for all stock items and that all shipments be tested before payment is made. These tests usually cover such items as strength, elasticity, construction, stitch, color fastness, and the like. To determine whether or not a specification is being met is the work of an expert and cannot be safely entrusted to a person without technical training.

▼

Duplicating Mohair Fabric

Technical Editor:

I am enclosing a sample of fabric made of 26/1 mohair as it comes from the knitting machine and also a sample of this fabric (marked No. 1) dyed and finished, which I wish to duplicate.

The sample marked No. 2 was scoured and dyed in a reel kettle with no previous treatment. The sample marked No. 3 was crabbed before being scoured and dyed in the same manner as No. 1. These samples were scoured with soap and dyed with acid colors in a bath acidified with sulfuric acid.

What treatment is necessary to duplicate sample No. 1. (7748)

From an examination of the fabric to be duplicated, it seems quite possible that you may find it necessary to full slightly to get the soft effect. We suggest that you scour in the usual manner, wash off, and add about 1 gal. of sulfonated oil to sufficient water to wet out the material thoroughly. Then half extract, and take the goods to the fulling mill, doubling each piece. Run as long as the shrinkage in width will allow; do not add any liquor to the pieces after extracting, as too wet or too heavy a consistency will cause the material to freeze in wrinkles. When fulling is completed, wash for a period of 30 min. with warm water, cool the goods, extract, and send to the dyer. This fulling process can be done after dyeing if you so desire, but we suggest that you try a piece both ways and determine which is the better method for your purpose.

▼

Crinkled Effect in Damask

Technical Editor:

In the inclosed sample of imported damask you will notice a decided puckered and crinkled effect. Will you kindly ascertain how this effect is obtained? (7784)

The crinkled effect is produced by the nature of the weave and not by

the construction of the warp or filling. There are two orders of sateen weave, one being an eight-end and the other a four-end. The four-end sateen, filling face, weaves the pattern proper, while the eight-end sateen, warp face, weaves the portion between the figures of the pattern.

In weaving, the four-end sateen in the figures affords a greater contraction of the warp and filling than does the eight-end sateen weave. There are practically twice as many intersections of warp and filling in the four-ends as in the other, and this extra intersecting draws up that portion of the design weaving the eight-end and causes the crinkling of the cloth in that part of the weave.

▼

Brown Color in Bleached Cotton Goods

Technical Editor:

We are sending under separate cover, a child's bleached union suit. This garment has been in the box probably eight or nine months. We had occasion to remove several hundred dozen of these goods from the boxes, and in doing so we found a small quantity of the garments with brown parts sewed into them. These parts, of course, have changed color since they were made and packed away; and on this particular garment which we are mailing, you will note that the inserted band in the drop seat is very brown.

We have had more or less of this trouble for the past two years. Previous to that time we did not use any softener in our cloth, nor did we use very strong bleaching liquor; but it has been necessary for us to bleach our cloth much whiter, therefore making it necessary to use softener to keep the cloth from feeling harsh.

We have been inclined to attribute this discoloration to the softener, but have no way to prove that this is a fact, as these discolorations show up only occasionally and after the goods have remained in boxes for a considerable length of time.

Will you advise us what is the cause of the discoloration. (7751)

It is our opinion that the trouble is caused by incomplete removal in the boiling-out bath of the natural wax and coloring matter in the cotton. When the goods are freshly bleached, they appear white; but upon being stored for some months, the wax works its way to the surface, giving the underwear the general brown discoloration.

It would be well to check your kier boil and the preceding boil-out bath to make sure that you have a good, clean, white cotton. We also advise checking your water to make certain that there are no calcium or magnesium salts present which would unite with your softener and cause brown discolorations upon standing. If all of your goods showed the same discoloration, we would be inclined to blame the softener; but this possibility seems to have been eliminated, since only certain lots are affected. Finally, make sure that you wash your goods thoroughly between operations, so that no chemicals are left in them.

▼

Rough Face on Felted Goods

Technical Editor:

Can you tell me just what method or process is used to give a smooth finish to a piece of knit goods that has been quite highly fulled or felted? While the fulling seems to have been accomplished satisfactorily, the problem lies in being unable to obtain the desired smoothness on the surface of the cloth. Would the quality of the yarn used and the length of time in fulling be important factors to consider in regard to smoothness of face? (7744)

The nature of the yarn and the length of time in fulling both have an appreciable effect in regard to smoothness of face. If the goods require an extra long run in the fulling mill, this would tend to produce roughness. Excessive yarn twist will have the same effect.

In order to produce a smooth face on goods of this type which finish rough, a special shearing procedure is employed. They are first given a few runs through the shear in the ordinary manner. Then the sand roll is applied, and the goods are given another run. The sand roll is then removed and the fabric is sheared until a smooth face and good handle are obtained. If there is no sand roll on your shear, you can run the material dry through the napper (not too much contact), and this will give you a clear finish.

We recommend that you check up on the twist in your yarn, as this type of goods should not have to be run for any great length of time in the fulling mill.

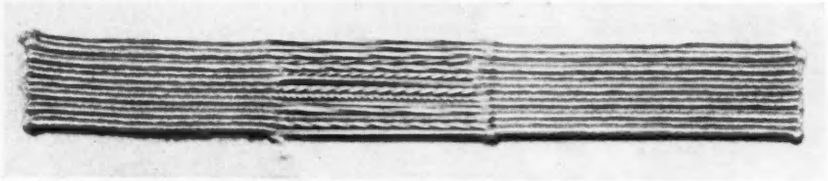
Inquiries should give the fullest information possible; and if damaged material is involved, a sample should be sent. We give no consideration to anonymous inquiries and do not undertake routine analysis of yarn or fabric, or investigation involving unusual expense.

Specks in Rayon Elastic Tape

Technical Editor:

We are having considerable trouble with elastic rayon tape. You will notice that the sample of rayon elastic we are enclosing is very speckled, and we should like to have you inform us as to the cause and remedy for this defect. It seems to use that this information would be important to other manufacturers of this material. (7766)

The "speckled" appearance you complain of is caused by twist in the rubbers in some or all of the ribs. The different angles at which the rayon cover reflects the light as it follows the different planes of the square rubbers is what gives the speckled effect.



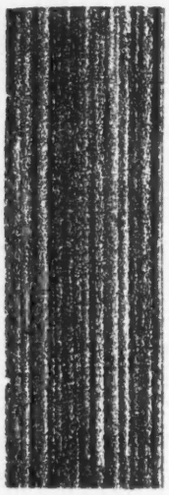
Showing effect of twist in the rubbers on rayon elastic tape

If you will take a 3-in. or 4-in. piece of this material, cut off one or two ribs from one side of the piece, and then with a firm grip extract the rubbers one by one while holding the other end of the fabric tightly, you will discover several turns of twist in some of the rubber threads. You will note that some of the rubbers twist in one direction, and some in the opposite direction. In an adjoining piece of material the same rubbers may be found to twist in a direction opposite to the rubbers in the first piece. You will also discover, if you compare the length of the extracted rubber threads, that some are much longer than others. In the rubbers extracted from a 2-in. piece of braid, the writer found a variation in length from 1¼ in. to 1⅞ in.

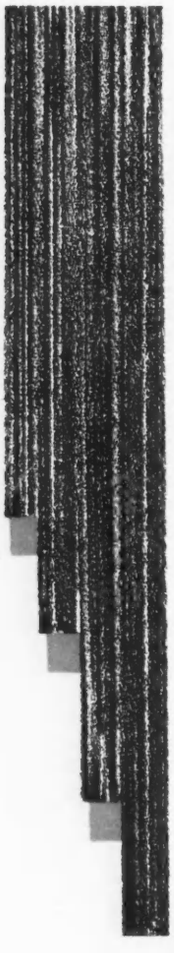
The twist is put in the rubber threads by friction of the rayon—first from the carriers running in one direction, then from the carriers running in the opposite direction, the direction changing as the tension on the individual rubbers varies.

The only possible cause to which we can attribute your trouble is that you have practically no tension on your rubber warp. When you increase the tension, you will have to reduce the number of braiding stitches; and this will alter the width of the finished braid.

The first step in correcting your trouble is to even up your rubber warp. Then you should place almost as much tension as possible on the warp. In determining the proper tension lies the secret of perfect elastic braid manufacture. We cannot give you any definite idea of the amount of weight for the number of rubbers you are using because we do not know what type of levers you employ. Incidentally, all the rubbers should be on one warp beam suspended beneath the braider.



Durene



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◆ *Survey of Fabric, Knit Goods, Yarn and Raw Material Markets* ◆

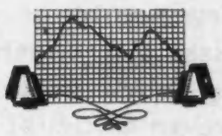
TEXTILE WORLD ANALYST

Cotton Held in Artificial and Weak Position

By Dr. L. H. Haney

SUMMARY

While awaiting the outcome of plans to inflate bank credit, the cotton market is temporarily supported by southern holding. The situation is so artificial that we do not care to hazard a forecast. The fundamentals, however, are weak.



THE time is drawing near when the possibility of inflation as a result of large injections of Government credit will become known. There is no indication of inflation yet, but there are strong forces working for it and it is notable that business leaders are insisting that the proposed Finance Corporation's paper shall be eligible for rediscount at the Reserve Bank. If such a pumping of Government credit into our system of bank credit actually develops, we may yet see a very considerable decrease in the gold "cover" per dollar and higher prices for most commodities, including cotton.

If, however, the Finance Corporation is so safe-guarded that it cannot become an inflationary agency, and other Government loans are held to a sound basis, there is little in sight to cause an advance in cotton prices. The supply remains enormous, and the demand is limited by unfavorable business conditions, by ample supplies of goods and low profit margins of manufacturers, and by the general knowledge that the supply is more than ample. Barring inflation, a waiting game is going on between the holders of cotton and the buyers. The holders are keeping the market up now, but with general business prospects no better than they are, it seems probable that the longer they hold the more cotton there will be to sell later on. With cotton, as with most other things, hand-to-mouth buying appears to be the wise policy unless and until clear evidence of inflationary developments force buyers into taking a speculative position.

Bull Points

1. Producers continue to withhold cotton; the into-sight movement is slow and ginnings backward of late; bad weather has done considerable damage to poorly stored cotton.

2. Exports of raw cotton increased in November, and in that month were larger than a year ago.

3. The visible supply of American cotton in and afloat to Europe is about 400,000 bales less than a year ago.

4. Total domestic mills and warehouse stocks of cotton have declined more than usual since July; stocks of raw cotton in consuming establishments were the smallest on any Nov. 30, since 1924.

5. Mill consumption of raw cotton in November was larger than a year ago; the season's total to Nov. 30, was 174,000 bales more than last season.

6. Stocks of carded cotton yarns at the end of November were below last year.

7. Stocks of carded cotton cloths increased less than usual during November, and were well below last year. Unfilled orders increased more than seasonally and were the largest for any Nov. 30, since 1928.

8. Wholesale dry goods sales increased slightly in October; New York jobber sales were also larger.

Bear Points

1. Cotton ginned to Dec. 13, was 15,358,000 bales, against 13,259,000 bales last year.

2. The world visible supply of American cotton is larger than last year.

3. Mill and warehouse stocks of raw cotton in the United States were the largest for any Nov. 30, in recent years.

4. Exports for the season to date are less than a year ago.

5. Foreign mill activity is low, and demand for cotton textiles is dull; Japanese buying has fallen off and is bound to be much reduced on account of the decline in the yen.

6. The southern cooperatives, by buying spots and selling futures are causing an artificially high basis and hampering the distribution of the crop.

7. Domestic mill consumption of raw cotton, on an average daily basis, declined more than seasonally in November. The trend of mill consumption has been downward since April.

8. Replacement margins of manufacturers fell to new lows in November.

9. Stocks of carded cotton yarns increased in November; unfilled orders declined and were the lowest for Nov. 30, since 1927.

10. Spindle activity was the lowest since February.

11. Sales of carded cotton cloths declined in November. Orders for finished cotton goods were less than production.

12. Commodity price averages continue to decline; silk at a new low.

13. Uncertainty concerning Congressional action and continued proposals for the export debenture and equalization fees tend to check European buying.

Statistical Position

November statistics do not indicate much improvement in the raw cotton position. Our seasonally adjusted index of the average daily consumption of raw cotton by domestic mills declined in November, and indicated the lowest annual rate of consumption since February. The broad trend of mill consumption has been gradually downward since the peak for 1931 was reached last April. The monthly adjusted index was 86.9% of the average for 1921-26 during November, against 87.9% in October and 84.1% a year ago. (The smoothed curve plotted in the chart is a 3-month moving average.) In comparison with other manufacturing industries, the activity in the cotton branch makes a favorable showing, but raises the question, is it not out of line with general requirements?

For the first four months of the crop year, the domestic consumption of raw cotton was 174,000 bales larger than last season, compared with an excess of 160,000 bales at the end of October. This

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The analysis and forecast by Dr. Lewis H. Haney, Director, New York University, Business Research Bureau, which regularly appears on this page, considers various branches of the textile industry from week to week. The conclusions reached in the Analyst are mostly forecasts and generally apply to a time two or three months ahead. The analyst is based on statistical data and does not reflect temporary trade sentiment.

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season's exports, on the other hand, have been 327,000 less than those of the 1930-31 season. The deficit in exports is not so large as a month ago, when it was 490,000 bales, but the net result of the domestic consumption and exports is a decrease in distribution compared with last season of 153,000 bales. Some improvement, however, is indicated, since the season's decrease in distribution as compared with a year ago was 330,000 at end of October.

We must remember that last season's business was poor, and the fact remains that this season's crop estimates have been increased until the average available domestic supply for the rest of the season has become oppressive. The supply curve in the chart indicates the largest quantity available at the beginning of any December in the post-war period. There were available at the beginning of the season over 1,940,000 bales per month for distribution. Since the average distribution per month has been scarcely 1,160,000 bales thus far, the wide difference is causing a rapid increase in the potential domestic carryover. Thus the supply curve in the chart shows the sharpest rise on record for this time of the year.

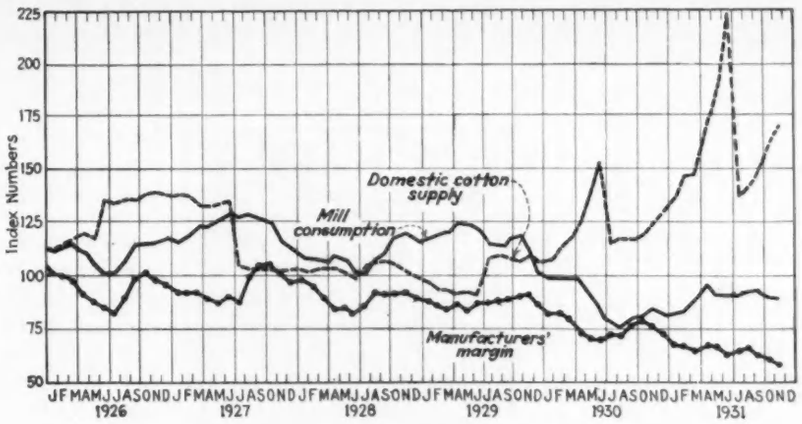
Index Numbers
225
200
175
150
125
100
75
50
Domestic cotton supply
Mill consumption
Manufacturers' margin
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1926
1927
1928
1929
1930
1931

Fig. 1. GENERAL COTTON BAROMETER: Consumption—Average daily adjusted for seasonal variation, three-month moving average: Manufacturers' Margin—Average of replacement margins; Average Monthly Available—Net domestic available for crop year adjusted for seasonal variation. 1921-1926 = 100 for all indexes

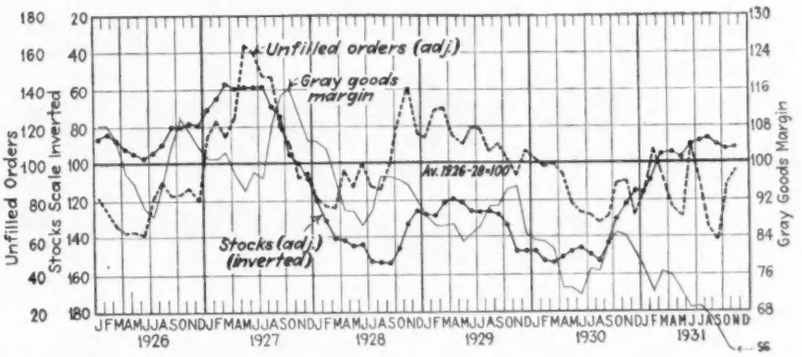

Fig. 2. COTTON CLOTH BAROMETER: Unfilled Orders, Stocks (inverted) Adjusted for Seasonal Variation, Association of Cotton Textile Merchants of New York. Gray Goods Replacement Margin Based on TEXTILE WORLD *Index. Average for 1926-1928 = 100 for three indexes.*

NEW LOW IN MILL MARGIN

During November, the replacement margin of the average manufacturer fell to another new low for recent years. It indicates that for the industry as a whole, supply and demand are out of balance. Cotton consumption could hardly be expected to increase and move against the trend of general business very long while the cotton manufacturer's profit margin is declining. More drastic curtailment of activity seems necessary before operations can net a more satisfactory unit profit.

The price of raw cotton declined during most of December, but held above the previous low of the season which was touched in October. This may seem to mean that investment buying is coming in at the present low prices, and that the trend of prices will be upward from now on. This does not necessarily follow. The withholding by producers, banks, and government agencies has tended to stabilize the market. The December decline has put the cotton market in a stronger technical position, from which a rally is possible, if not probable. But acreage estimates for the new crop will be necessary before it is definitely established whether or not cotton prices have passed bottom. Meanwhile, an irregular sidewise movement seems most probable.

CLOTH POSITION

Gray goods markets were dull during December, and prices moved in a fairly narrow range. Probably the monthly averages will show a moderate decline, which about offsets the lower price of raw cotton. Both the gray-goods and the finished-cloth replacement margins declined to new low levels in November.

Our gray-goods barometer, which is based on the balance between orders and billings of finished cotton cloth, declined further during November. Production has been curtailed, but new business has diminished even more rapidly. Stocks of finished cotton goods have therefore tended to increase moderately.

Carded cotton cloth sales fell below production during November, but were fairly large compared with shipments. Since unfilled orders increased more than usual, while the increase in stocks was less than usual, this is a fairly good showing; but, with the trend of sales downward, unfilled orders are likely to decline also. Trade reports indicate a dull demand during December. Wholesale trade in general appears to be backward for the season, and on the whole it seems probable that cotton cloth markets will undergo further periods of weakness before equilibrium is restored.

Market Briefs

Cotton: *Sluggish market meets continued steadiness.*
Cotton Yarns: *Low stocks of yarns basis for future optimism in quiet market.*
Cotton Goods: *Quiet year-end market.*
Wool: *Wools in strong position for opening of new year.*
Worsted Yarns: *Year-end market leaves yarns without change.*
Woolen Goods: *Worsted stronger; some advance buying.*
Silk: *Poor demand softens price.*
Silk Yarns: *Yarn mills hope for January improvement; meanwhile all branches are quiet.*
Silk Goods: *Novelties active; also canton crepes.*
Rayon: *Little demand; good 1932 outlook.*
Knit Goods: *Infants' and children's hosiery for spring active; underwear demand light; price weakness makes swimsuit prospects dubious.*

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

◆Cotton Yarns Find Signs of Hope

INDICATIONS of low stocks of yarns in manufacturers' hands, and consequently a good prospect for an early demand for yarns after the first of the year, are cited in the recent developments in the cotton yarn market. One outstanding feature is the maintenance of deliveries in substantial volume. While there have been instances of some requests for delayed shipments, other houses continue to report unusually good deliveries, with frequent requests for haste in shipments. One important factor said he had only two cases of help-up deliveries on his books. This is an unusual record, and it is regarded as a sure sign of a need for yarns. Another hopeful element is noted in the recent development of inquiries for yarns for immediate shipment. While the bulk of these are for comparatively small lots, there have been inquiries for as much as 100,000 lb. of carded knitting yarns.

Dealers have no sizeable lots on hand to meet any pressing needs in any volume. Spinners, because of their curtailed schedules and the elimination of night work, have not accumulated any large volume of yarns which would prove a burden in a quiet market. Users have been inquiring for yarns against business on which they are figuring and on which they expect to do something after the year gets under way.

The year's business has been mixed. Those factors which confine their sales to a territory in and around Philadelphia, have not had the opportunities to do the volume of business enjoyed by others of broader organizations reaching all parts of the country. Philadelphia conditions have been very unsatisfactory to many dealers. Local business is said to have been about the poorest in the last ten years. About the only mills that have been operating to any great extent have been the small non-union full-fashioned hosiery mills and the carpet mills. Plush manufacturers, upholstery mills, towel mills, men's wear and dress goods mills, etc., have had a slow year, and staple counts such as 20s-2 and 30s-2 warps have suffered accordingly. In the fall of 1929, 30s-2 warps were selling at about 40c. while today they are quoted 19 to 20c., which is a drop of fully 50%. Since the first of 1931 carded yarn prices have declined 5 to 6c., with 20s-2 in January at 19c., while to-day they are quoted 15½ to 16c.

Carded knitting yarns show only scattered call. With the average quotation around 13 to 13½c. for 10s, dealers say they would not find many spinners willing to accept the lower figure. Deliveries for this trade have been well maintained but new business is at a minimum.

Combed yarns are not active, although some scattered interest is noted with prices inclined to be very erratic, so that it is difficult to know where the market stands. Reports from Gastonia indicate that spinners in that section have business on their books which will enable them to operate on full daytime schedule beginning Jan. 1, for 10 to 15 weeks. Mercerized yarns have not been active of late. Specifications are rather slow.

◆Cotton Steady in Year-End Market

THE feature of the year-end cotton market has been its steadiness. This has reflected an absence of selling pressure in the South and comparatively small offerings rather than any expansion of demand. The failure of cotton to come out in any quantity in advance of the holidays, increased confidence in the stability of the holding movement, and the demand has been partly for trade account with some of it coming through brokers with Japanese and other Far Eastern connections. Aside from that, buying which has seemed fully equal to the moderate volume of southern hedging which has made its appearance, business has consisted largely of technical readjustments incident to the passing of December 1931 contracts, and the first January notice day. Liquidation of December and January was largely in the shape of switching, however, and had comparatively little effect on the market which is showing a tendency to await early new year developments at prices ruling around the 6½c. level for May contracts.

The cotton trade feels itself faced by many uncertainties with the opening of the new year. On the one hand there are the big surplus supply of cotton and the continued depression of trade. On the other there are the low price, a feeling that stocks of goods in the hands of consumers or retail distributors are light, and a growing hope that the depression of 1931 will be followed by a gradual improvement of conditions in 1932. Meanwhile there is the possibility of disturbing reports from Washington as Congress begins to consider farm relief measures.

The buying for Far Eastern account undoubtedly means that there will be a larger proportion of American consumption of all growths this season. American cotton has been selling at more attractive prices than Indian, while estimates of the Indian crop have been reduced so that this disparity is likely to continue, and any real improvement

(Continued on page 55)

◆Worsted Yarns Close Quiet Market

THE close of the year finds the usual dull market in worsted yarns. This is a normal condition and the trade contented itself with contacting customers in an effort to obtain specifications, and on the chance of catching small orders for immediate needs. However, the total volume of trading is very limited.

Optimism marks the general attitude regarding the outlook for the new year, and it is a rare thing to find any trade factor who is not talking hopefully of better things in 1932. Even if this is a case of "the wish being father to the thought," the attitude is a good sign. If it becomes unanimous, there will be a more encouraging movement along the line. Specifications have not been coming in as many would wish from men's wear manufacturers and are hard to get. There is disposition to believe that this business has been retarded by the conservative attitude of many cutters-up as to credits among retailers. Collections here are said to have been rather slow of late, and this condition is causing a more cautious attitude in granting further credits.

Nevertheless, men's wear manufacturers are showing an optimistic feeling as regards business in January. They feel the outlook is promising for sales and are looking for a decided improvement in the movement of goods. There has been a fair amount of sampling. Continued firmness in the wool market is a favorable factor. Prices for the raw material are holding well. Yarn prices have shown no recent changes of moment, and in the absence of any volume of sales, are practically nominal. Stocks of yarns with spinners are not large. There has been a disposition to curtail production where there has been no demand. Manufacturers likewise are not carrying any stocks of moment, and consequently the market is considered in a favorable position.

Business is said to have been coming in on bathing suits in such a volume as to indicate a more favorable outlook in this field. Here again stocks are light, and knitters are optimistic as to the future. Recent low prices are regarded as injurious to both buyer and seller, and stabilization is hoped for. Spring sweater buying will not develop until January, but here again there is a hopeful attitude with a good chance for sales, in view of depletion of lines in distributors' hands. Producers of knitted goods of all kinds are looking for a resumption of activity after the first of the year. With wools holding firm, manufacturers have been trying to maintain quality as best they can at the most

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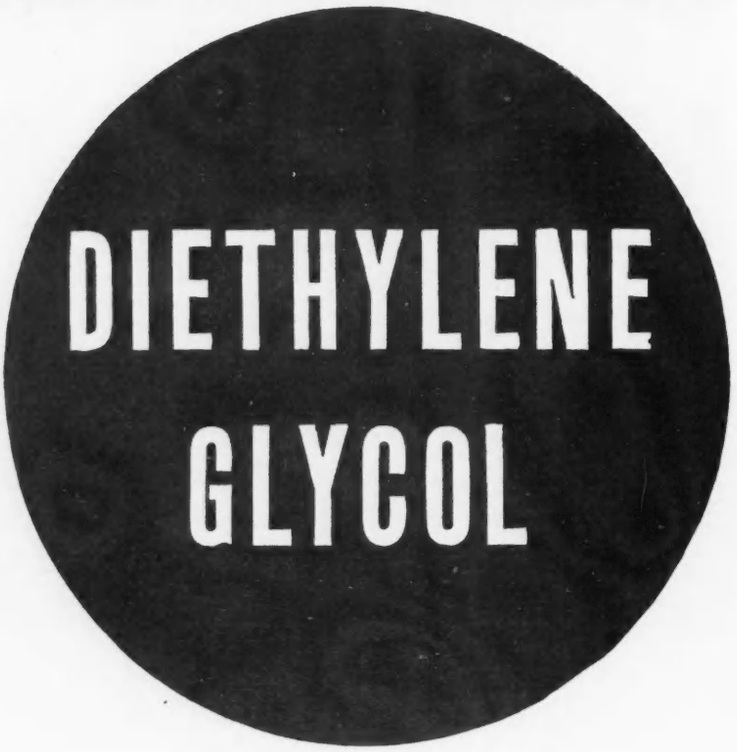

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YARNS AND RAW MATERIALS

TEXTILE WORLD ANALYST

favorable price for yarns. They have been making various experiments with all sorts of blends and mixtures of grades to secure the quality needed to make their goods marketable at the most favorable price. Most spinners are holding firmly on their quotations, with 90c. about the average limit on single 18s dyed on cones, made from a straight 50s grade.

◆Wools Strong As Year Opens

EXCEPT for steady interest in medium wools the market is quiet, yet there are indications that manufacturers are showing a normal interest in the types and grades of wool they will require in the near future. Sample lots are being tested out, options on substantial quantities are being given, prices are being discussed, and altogether the potential business looming ahead is of no small magnitude. The trade, quite unwilling to press wool on a cautious market, is content for the time being to await the demand for the large weight of wool which short supplies in manufacturing hands would seem necessary.

As compared with a year ago the raw material situation is much more promising. There was then a heavy carryover, also the prospect of a heavy clip. Manufacturing showed no signs of such expansion as occurred in midsummer which was featured by the largest activity in wool combing in years. The wool trade was divided in sentiment and apprehensive.

The most optimistic trader would hardly have dared to predict an increased consumption during the year of approximately 100,000,000 lb. This huge increase in demand cut deeply into the carryover and made substantial inroads into the 1931 clip. As a result the trade opens the new year with nothing more than a normal aggregate stock of unsold wool with the medium grades in subnormal supply.

Demand for territory wool has been in greatly restricted volume during the week with the exception of quarter-blood for which there has been a moderate to fair business at firm to higher prices.

Three-eights-blood grade wool continues sluggish. This grade has received considerable publicity and the smaller supply carrying the possibility of sharp advances leaves the wool in a conspicuous position. The half-blood wool is in spotty call, but has been firm around price levels in force throughout December of 54 to 55c. Fine graded territory is stagnant, while original bag wools have been slow of sale.

◆Wool Substitutes Rising From Lows

THE general wool substitute market covering mill wastes, noils, rags, clips and recovered materials opens the year hopefully under the impression that woolen manufacture is likely to do much better than in 1931. The position of white rags is showing a stiffening tendency. Supplies are at a very low point owing to the decided curtailment that has been underway for several weeks in grading operations. Graders are showing interest in the report of a trend to a larger consumption of white wool substitutes and are particularly interested in the substantial December increase of imports of white clips. The American rag similar to the imports is said to be white sweater clips which are in low supply and quoted around 38c. It is not known what prices were paid for the English clips arriving, but the average price of the October import was 22c. or with the duty added, 40c.

The wool waste market is firming up in anticipation of a better demand for white and colored thread wastes as well as cards and laps. Reports from one or two sections in New England indicate a more optimistic feeling among woolen mill consumers.

Wool noils show a distinctly firmer tendency. As compared with the first of December fine noils are quoted about 2 to 3c. higher for the best material and the Australian fines have been marked up to a similar degree. Most dealers believe that the low point has been passed and that anywhere near current basis noils are a safe buy for manufacturers.

◆December Rayon Sales Above 1930

CHRISTMAS brought the expected slackening of demand for rayon yarn, but even with minimum buying at the year-end, the producers were in good position as regards December volume. Thanks mainly to active call for crepe yarns, the total sales during the last month of 1931 were well above the same month in 1930, and decidedly closer to November figures than is usual. Buying was active through the early days of Christmas week, and some future orders were placed. Both knitters and weavers look to the first quarter of the new year with confidence, and the year-end tone was so strong as to indicate a free movement of most of the 100s and 150s shortly after the holidays.

The market generally expects January business to begin picking up early in the second week. Current stock and order position is a matter for much satisfaction; producers are carrying over very moderate stocks, price tone is firm and manufacturers show none of the hesitancy shown at this time last year.

◆Raw Silk Prices Show Further Decline

RAW silk levels continued shaky through the final days of 1931, despite a better tone in Japan. Monday found the yen fairly steady, and Yokohama believed that currency was approaching stability. There was practically no demand in the New York market, however, and importers did not look for any real buying prior to the middle of this month. Primary market prices dropped 5 to 10c. this week. Holiday interruptions added to the general uncertainty and whatever slight inclination manufacturers might have had to cover on spring needs, was offset by their determination to end the year with minimum inventories.

Hosiery mills made some inquiries Monday and Tuesday, which raised the hopes of the raw silk market, but these nibbles did not materialize in orders. The knitters—indeed the entire range of silk-consuming industries — have negligible quantities of silk available, and if they get any movement at all after the holidays, they will be obliged to buy actively. Hosiery mills complain they are not selling sufficiently to justify increasing their output.

◆Yarn Mills Hope For Early Pick-Up

SPINNERS and throwsters are relying on a pick-up in belated market demand during this month to compensate partly at least for the unsatisfactory volume placed during the final quarter of 1931. Throwsters entered the new year in good position so far as stocks were concerned; prices, except for reaction to the primary market, have been steady; and the general feeling is that manufacturers will be obliged to buy actively the latter part of this month, if they are to make any spring goods.

The opening of the spun silk season is some months behind, but mill men are still hopeful of a fair volume. Increased confidence among broadsilk mills is reported, and as practically all spring fabric lines will be open by the end of next week, spinners estimate that yarn demand should improve about two weeks after. The spun silk trade is awaiting consumer reaction to the $1.00 spun silk knitted underwear.

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FABRIC MARKET REPORTS

TEXTILE WORLD ANALYST

◆Quiet Holiday Week in Cotton Goods

THE week between the Christmas and New Year holidays did not disappoint the expectation of the cotton goods market that it would be a most inactive period. Gray goods trading was very light, but there were some buyers in the market, not so much looking for goods as for information as to the effect of southern curtailment on the tone of prices. Not much finished goods business was accomplished, as distributors wished to come to the end of the year with stocks and commitments as light as possible.

There was said to be some evidence of retailers scouting through the market for distress lots of goods. Chain stores were said to be largely represented in this move. Such buyers apparently hoped to pick up bargains from those houses which might prefer to take a submarket price for the merchandise rather than carry it over on their year-end statements. So far as could be learned there was little of this sort of last minute liquidation in primary circles.

At mid-week in print cloth circles there were reports that several constructions appeared to show signs of real strength. This tendency was more prominent in broadcloths than in plain goods. However in the latter it was becoming harder to find 60x60s at 3 7/8c. and the price was generally considered 3 3/8c. For 4-yard 80-squares the market was 5 1/8c. for the nearer weeks with 5c. possible on deliveries from the last week in January onward. Among the broadcloths, 100x60s were spoken of as in tight position, with January at 5 1/2c., February at 5 3/8c. and March at 5 1/4c. from some hands. It was said that 90x60s were not to be had from first hands before February because of the shift of looms from this count to 80-squares or 100x60s broadcloths.

Sheetings and drills were quiet. A few sales of 4-yard 48-squares were reported at 3 7/8c. Drills were held on the basis of 5 3/8c. for 30-in. 2.50s. Further curtailment in production of wide sheetings is considered desirable.

The general curtailment situation is analyzed as follows in the weekly letter of the Hunter Mfg. & Commission Co.: "Figures prepared by the Cotton Textile Institute show that almost 60,000,000 more yards of cotton cloth have been shipped from the mills to customers this year than last, and yet, in spite of this fact, there is no profit in goods today, and the only excuse for this that we can put our finger on is that production for the year to date has been 15,000,000 yd. in excess of shipments. It scarcely seems possible that a difference of 1½% in the total should ruin the picture, but such seems to be the case. Surely, if the corrective measures necessary to bring about a balanced situation require no more serious sacrifice, a way should be found of securing them. On the other hand, we have no sympathy with proposed measures that would tend to create an artificial situation in the other direction by restricting production unnecessarily below consumption, for an artificial situation of that kind never did any industry any good for any considerable length of time."

◆Broadsilk Interest Leans to Novelties

ATTRACTIVE broadsilks which are particularly novel in design or weave or both, will enjoy a good demand from cutters-up during the first few months of the year, in the opinion of several well-informed executives. These factors point to the general interest in rough fabrics for day and evening wear as an indication of further stress on novelty goods. By novelties, however, they do not mean prints which are a highly questionable part of the spring line. Design itself will not be sufficient to win strong approval; the finish also must be different.

Year-end demand was divided among canton crepes and novel rough-surface fabrics. The market was not too firm at the lower end, and much of the cheaper merchandise was sacrificed to liquidate. Even with this enforced movement, there is a rather heavy carry-over of low-priced stocks. Demand for prints centers chiefly on fabrics used for $2.75 and $3.75 dresses and the market regards the outlook for prints as none too promising. Quality canton crepes, chiefly plains, and in pastel and medium colors, have been selling steadily; prices held firm early in the month but concessions were being offered just before Christmas.

◆Wool Goods Call Tends to Futures

WOOL goods outlook for the new year is better than had been expected. It is true, the picture is uneven; some firms are selling into February, and others cannot get spot orders. But there appears to be a break in the clouds, and weavers are hopeful of a definite upturn in sales sometime this month. Mills have been getting both spot fill-in business and future orders; one significant point is that, in staple worsted demand the trend is toward light grays, indicating spring interest among cutters. Cutters of men's goods, while far from enthusiastic, are certainly less gloomy than they were a month ago. Also, they are less inclined to dispute prices; in certain ranges of worsteds, prices have held firm since the end of November.

It would be easy to grow overconfident about prospects for the next two months, but much of the present pessimism seems to be unfounded. Mills which merchandise aggressively did a fairly good business during the final weeks of this month, and they consider the prospect for the immediate future as improved. Distributors have such meager stocks available that even a moderate spurt in consumer call for suits would stimulate worsted activity; at least, this is the mill men's reasoning, and they point to the tendency toward advance buying as indicating that cutters themselves are leaning to the same theory.

Fancy worsteds are backward, current interest centering on mixed cloth staples in plain effects. There is pronounced interest in light shades, and grays are important.

▸Silk Yardage Sales Show Decline

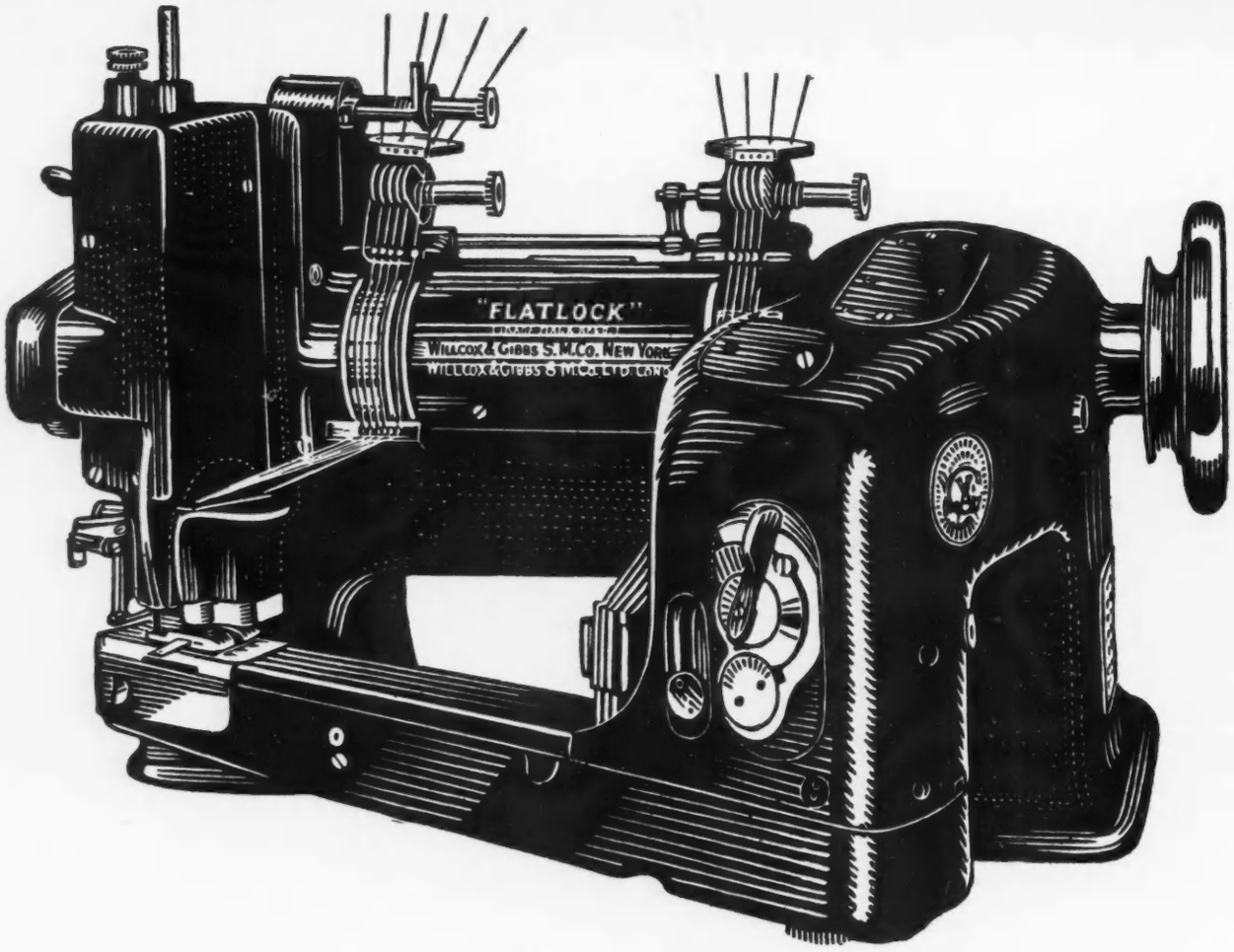
Yardage sales of broad silks decreased 0.7% during November as compared with the previous month, and 4.1% as compared with November 1930, the Silk Association of America, Inc., reports. The first eleven months of the year show an increase of 6.4% in yardage sales as compared with the same period of last year. Stocks on Nov. 30 were 2.2% higher than on Oct. 31, but 11% lower than on Nov. 30, 1930.

▸New Fabric Combines Durene Cotton and Mohair

The Richard Thomson, Jr., Division of William Iselin & Co. has just introduced to the trade a collection of effectively styled Durene mixtures and all Durene novelty meshes. One fabric presents a combination not often seen of Durene and mohair. There are several Durene and rayon mixtures, with Durene predominating and the synthetic fiber used as contrasting luster in a flaky pattern.

▸Navy Wants Parachute Silk

The Bureau of Supplies and Accounts, Navy Department, has invited bids on an order for 10,000 linear yards of white parachute silk, bids to be opened in Washington at 10:00 a.m., Jan. 5. The silk must conform to the following specifications: 1 up and 1 down, plain weave, or 2 up and 1 down, twill weave, 36 to 37 in.



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KNIT GOODS MARKETS

TEXTILE WORLD ANALYST

◆Underwear Profits in Lightweights

MOST of whatever profits accrued to underwear mills during 1931 came from lightweight and medium weight merchandise, according to one well-informed sales manager who reviewed the year this week. Ribbed underwear held steady at the price end, thanks to low stocks, but unseasonably warm weather through the fall cut demand so drastically that the year's profit at that end was badly crimped. At present, mills are writing occasional fill-in orders for heavyweight garments. Most of the current business, however, lies in women's rayons and men's lightweight cotton garments. There is no real demand at any end; one reason for the hesitancy is that some important mills will open their spring lines next week and buyers are waiting to see what these firms offer.

Stock carryover in underwear for the year is low. These knitters are coming more and more to realize the need of curtailment and they practiced that policy quite generally this year; their good stock position helped them to survive despite an abnormally low demand and a weak cotton market.

Christmas came and went with the market still very undecided as to dates for the openings of 1932 heavyweight lines. Sentiment seems to be turning toward earlier showings than was first expected; several of the larger mills indicated this week that they may announce their 1932 prices on ribbed underwear before the end of the month.

◆Mills Drop Swimsuits, Fearing Bad Year

PERSISTENT price-cutting and backward buying in the bathing-suit market makes the 1932 outlook very dubious, to say the least. Several small but hitherto successful swimsuit mills suddenly decided during the holiday period to discontinue the line and to concentrate on sweater business, and such other knitted merchandise as can be produced on the same machines. This step by these units may prove to be far-sighted; spokesmen for the companies attributed the policy to the increased competition in bathing-suits and the strong downward trend in prices. There is no question but that swimsuits now are in a very different position from that they enjoyed since the advent of the sun-suit; unless the industry exercises caution, a decided slump will develop during the first half of this year. Output should be curtailed to reflect the poor demand, which step would help to offset the down trend of prices.

Heavyweight sweaters are surprisingly active, considering that the season is practically over; much spot business in small orders is being placed and mill agents look for this demand to continue through the current month. The position of lightweights also has improved, and there is a moderate future trend in contracts.

Worth Street agents have written a good quantity of business for February and March delivery. Interest centers on crickets, with a secondary demand for baby shakers. Solid colors and conservative patterns are the rule.

◆Caution, Not Panic Hosiery Cue for 1932

WITH the hosiery market in its usual holiday lull, manufacturers have been utilizing the time to do some careful thinking regarding policies for 1932. Warned by their experiences of the last year, companies are a good deal less disposed to go ahead gaily building up stocks; individualism is still a strong trait of the hosiery knitters, but it seems likely that part of the trade at least will be more industry-conscious this year.

Conversations with representatives of companies which made profits during 1931, brought out some interesting recommendations for the new year. The main points stressed were: be cautious, but not panicky. Economize intelligently within the organization; enter 1932 with the determination to dig yourself out of the depression. The situation will not right itself—only intelligent action by business can do that.

These thoughts may sound like bromides, but they come from heads of several of the few hosiery companies that made real profits during the year just closed.

Current market trends show greater confidence in mesh hosiery for spring. Mill agents this week discounted the idea of a glutted mesh market, pointing out that inferior mesh hosiery can be very easily detected by the woman purchaser, and that therefore large quantities of low-priced merchandise would not seriously compete with the better grades. There is some future demand for infants' sox and five-eighths lines, and manufacturers who have been writing this business are rather confident regarding January outlook. They did little full-fashioned business during the last two weeks, but this is a normal condition for the holiday period. Some mills termed Christmas volume as "fair"; others "indifferent"; very few reported active movement on anything like normal scale. Half-hose is in fair call, but demand continues to center, so far as volume is concerned, at the low-price end.

◆Raw Cotton Reports

(Continued from page 49)

in the demand for cotton goods in the world's markets should find a reflection in the takings of raw material from this country. There is a possibility, perhaps, that trade in the goods market will begin to pick up during the spring and that this will come coincidentally with indications of a reduced crop for next season. With present indications pointing to a world's carry-over of from 12½ to 13 million bales of American, however, it is quite obvious that the market must rely upon both an improvement in trade and a reduction in next season's yield if higher prices are to be maintained.

In the meantime local traders are inclined to anticipate what is known as a "trading market." Some feel that the statistical position may have been discounted in the price, providing the South continues to market slowly, and trade recovery is not too long delayed. Others are rather inclined to fear increased spot offerings as the new planting season advances. This view is based on a belief that a good deal of cotton is now being held in small lots by individual growers, who are perhaps independent so far as living at home is concerned and who are hanging on to their cotton for higher prices. As the need for funds to finance coming crop preparations develops, the bearish view is that some of this cotton may come on the market.

◆Limited Cotton Waste Demand

THE limited volume of business transacted in the cotton waste market during last week was confined almost entirely to the covering of requirements by short interests in peeler comber, and the sale to spinners of fine count yarns of a few lots of high grade Sak. strips. Woolen mill interest, which has been dormant for some time was more in evidence, and some dealers look for increased buying by this market during January, thus affording an additional outlet for soiled card strips and moderate quantities of peeler comber.

Cotton waste dealers at this time are concerned principally with the problem of arranging for their waste supplies during 1932. The amount of contracting done thus far is below normal owing to the uncertain cotton situation and the more general acceptance of commission selling as a method of merchandising cotton wastes. Peeler comber is reported to have been contracted for on a basis of 80-82% of spot, with peeler strips about 5% less, and upland strips 10% less.

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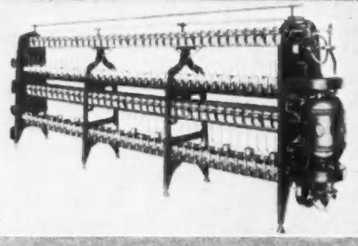
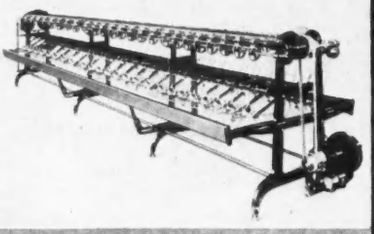
The Atwood plant today

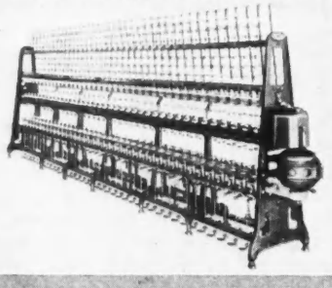
3 ATWOOD Leaders



"Monarch" Twister— double deck



"Stonington" Winder— single deck



The world-famous 5B Doubler-Twister

ATWOOD

THE ATWOOD MACHINE COMPANY

FOUNDED 1852

STONINGTON, CONN., U. S. A.

Sales Offices: New York, N. Y. Wilkes Barre, Pa. Stonington, Conn. Charlotte, N. C. Los Angeles, Calif.

ATWOOD MACHINES THROW THE BULK OF AMERICA'S SILK AND RAYON

1535

TEXTILE FINANCIAL NEWS

TEXTILE WORLD ANALYST

◆ Nashua Reports Loss for Year

THE Nashua Mfg. Co., including the Indian Head Mills of Alabama, reports for the fiscal year ended Oct. 31, 1931, consolidated net loss of $1,760,495, after depreciation interest, taxes and adjustments, compared with net loss of $1,642,627 reported in the previous fiscal year, and a net profit of $533,090 shown in the year ended Oct. 31, 1929. The operating loss, after marking down inventories, amounted to $816,382 for the year just ended, compared with an operating loss of $544,652 a year ago.

Sales amounted to $9,364,496 in the fiscal year just ended, compared with $11,202,192 a year ago and $16,070,583 in the year before that. The company closed the fiscal year with a surplus of $3,616,571, compared with $5,377,067 in the previous year, and $7,308,567 in the year ended Oct. 31, 1929. Although the number of units sold by the company show an increase over the previous year, gross sales declined due to constantly and rapidly falling prices.

"The reduction in prices necessitated further large inventory writedowns, estimated at about $997,000," stated Robert Amory, treasurer. "Intermittent and heavily curtailed operations resulted in higher than normal costs. This was especially burdensome in regard to taxes, depreciation and other fixed charges which cannot be reduced in proportion to production. The extra burden caused by the foregoing is estimated at $391,000.

"The quantity of goods in our warehouses, as a result of careful control of operation, is probably the smallest in the history of the company. The borrowings of the company are lower than ever before.

"The values at which the inventory is carried and the present prices of raw material appear now to be at such a low point that it is reasonable to expect there will be no further large writedowns in inventories in the coming year."

Inventories, at cost or market, whichever was lower on Oct. 31, 1931, are valued in the balance sheet at $2,366,007, compared with $3,606,923 a year ago. The company shows a reduction of $265,000 in notes payable since the close of the previous fiscal year.

Hamilton Sales Increase

Net sales for the year ended Nov. 30, 1931, of the Hamilton Woolen Co., Inc., totaled $4,582,881, as compared with $4,266,410 a year ago, according to the report to stockholders issued last week. As reported last week, Hamilton's net profit for the year amounted to $340,834, against $200,238 a year ago. The balance sheet shows current assets of $2,692,817 and current liabilities of $308,426, leaving net quick assets of $2,384,391, against a net quick or working capital a year ago of $2,365,090.

In his report to the stockholders, Treasurer Richard Lennihan says, in part:

"The accounts receivable have been carefully reviewed. All accounts known to be bad have been written off, and all doubtful accounts have been segregated on the books of the company. A reserve is carried to absorb the entire amount of these doubtful accounts. An additional reserve exists, which in my judgment is adequate, to cover unforeseeable contingencies connected with the realization of the remainder of the accounts receivable.

"All merchandise losses have been absorbed in current profit and loss. The inventory on hand as of Nov. 30, 1931, was valued at cost or market, whichever was lower. The inventory reserve of $75,000 existing on Nov. 30, 1930, and created to cover any unforeseen losses, has not been drawn upon and therefore remains unchanged.

"A portion of the profits of the year 1931 to the amount of $77,550 has been set aside as a special reserve for dividend purposes in 1932 subject to future action by the directors."

May Liquidate Mary Louise

Stockholders of the Mary Louise Mills, Mayo, S. C., will meet at the plant offices at Mayo on Jan. 26, to decide whether or not the mills shall be liquidated and their business affairs wound up. Notices of the meeting have been mailed out by H. T. Crigler, president, and Walter C. Ballard, Boston, Mass., treasurer.

Sulloway May Reorganize

The city of Franklin, N. H., is faced with the loss of the Sulloway Mills and an annual payroll loss of around $500,000 unless the people of the city and surrounding communities and present stockholders come to the rescue of the mills by subscribing at least $50,000, worth of stock in a new company which the Sulloway family plans to back with $100,000 worth of stock provided the public does its share. It is stated by officials of the company that liquidation of the company will follow if the new set-up is not made possible by January, 1932.

Dividends Declared

The directors of Davenport Hosiery Mills, Inc., declared the regular quarterly dividend of $1.75 per share on the preferred stock and 50c. per share on the common stock, both payable Jan. 1, 1932, to stockholders of record Dec. 21, 1931.

Montreal Cottons, Ltd., Valleyfield, Que., declared a quarterly dividend of 1¾% on the preferred stock, and 1½% on the common stock.

Boston Stock Auctions

The following sales of textile shares were made at auction, Dec. 23:

Shrs.	Mill	Par	Price	Ch'ge
284	Ludlow	...	60	—2
118	Naumkeag	100	50	....
25	Merrimack Mfg., com.	100	3½	+ ⅛
15	Newmarket	100	5	—5
50	Lancaster, pfd.	100	2½	....
48	Sulloway Mills	100	15	....
63	Villanova Worsted	100	10 lot	....
1	Plymouth Cordage	100	47½	—6½
25	B. B. & R. Knight, pfd.	100	3	....
10	Hamilton Woolen	100	50	—5
100	Merrimack Mfg., pfd.	100	8⅛ 8	—4⅛
105	West Point	100	35	....
61	Associated Textiles, pfd.	100	47 lot	....
60	Whitman Mills	100	3 lot	....
4	Pocassett Mfg.	100	20 lot	....
4	Taber	100	5 lot	....
973	Total			

▶ New England Textile Stocks

	Sale	Bid	Asked
Am. Mfg. Co., pfd.	50	48	..
Amoskeag	3⅜	48	..
Arlington	23	17	20
Associated Textile	10	...	10
Bates	60	41	..
Berkshire Associates, com.	12⅜	75	1
Berkshire Associates, pfd.	40½	11	15
Bigelow-Sanford, com.	16	..	..
Boot Mills	120½	40	60
Edwards	80½	42	46
Esmond, pfd.	98	95	99
Farr Alpaca	27	13	17
Hamilton Woolen	50	45	50
Hill	7	4	6
Indian Orchard	10	..	10
Ludlow	60	58	62
Merrimack, com.	3½	2½	5
Nashua, com.	7¼	3	6
Nashua, pfd.	29	..	21
Naumkeag	50	48	51
Newmarket	5	7	..
Otis	45	40	43
Pacific	7¼	..	..
Pepperell	30½	29	31
Plymouth Cordage	47½	46	..
York	8¾	6	..

▶ Textiles on N. Y. Exchanges

The following shows the movements of the leading textile stocks listed on the New York Stock Exchange and Curb for the week ended Dec. 28.

	High	Low	Last Sale	Net Ch'ge
Adams Millis	26	26	26	— 1
American Woolen	3⅛	2½	2½	— 1/8
American Woolen, pfd.	17½	15½	15½	—1⅛
*Blumenthal	4½	4½	4½	+ ⅛
Botany Mills, A	⅛	⅛	⅛	— 1/8
Cannon Mills	17⅞	17⅛	17⅛	— ⅛
Collins & Aikman	8½	7	7½	....
Consolidated Textile	⅜	⅜	⅜	....
*Courtaulds, Ltd.	6	6	6	+ ⅛
Gotham Hosiery	7¾	7¼	7½	....
Industrial Rayon	25	22	22½	—3
Kayser, Julius	8	7¼	7½	—1⅛
Kendall, pfd.	29	28	29	+ ⅛
Mohawk Carpet	8½	8½	8½	— 1/8
Munsingwear	12½	11⅛	12⅛	+ ⅛
Pacific Mills	9¾	8	8	—1
*Pepperell	30	30	30	....
Real Silk Hosiery	2½	2⅜	2½	— ⅛
*Tubize	2½	1½	1½	— ⅜
United Piece Dye Works.	11¼	10¾	11¼	—1½

*Listed on Curb.

▸ British Rayon Output A New High Record

Following the British levy of a new import duty on rayon hosiery, a large increase in British rayon production for November is noted. The yarn and waste output then reached 6,260,000 lb. against 5,260,000 lb. in October and 5,780,000 lb. in October, 1929, the previous high record. Rayon sales in November also touched a record, being 6,280,000 lb.

▸ Completes Survey of Philadelphia Upholstery Industry

The seven months' survey of the Philadelphia upholstery industry conducted by the Industrial Research Department, Wharton School of Finance and Commerce, University of Pennsylvania, has been completed and a final report submitted. This study was undertaken at the joint request of the manufacturers and the unions. Details of the findings will be published in a later issue of TEXTILE WORLD.

▸ Silk Association Dinner Jan. 21

The sixtieth annual dinner of the Silk Association of America, Inc., will take place Jan. 21 at 7 p.m. at the Waldorf-Astoria Hotel, New York City. Thomas B. Hill, president of the association, will act as toastmaster. The program of speakers is being prepared. The 1932 dinner committee in charge of arrangements includes A. B. Strange, Read & Lovatt Mfg. Co., chairman; W. Robert Blum, United Piece Dye Works; Frederick H. Knight, Susquehanna Silk Mills; Charles Muller, Sulzer Rudolph & Co., Inc.; Henry E. Stehli, Stehli Silks Corp.

▸ To Stimulate Study of Expenditures and Taxation

A campaign to stimulate concerted attack by communities on the problems of public expenditures and taxation has been launched by the New England Council through its community development committee, of which John F. Tinsley, vice-president and general manager of the Crompton & Knowles Loom Works, is chairman.

In a letter to chambers of commerce and other community organizations throughout New England, Mr. Tinsley calls attention to the action of the community development session of the Seventh New England Conference in urging by resolution that communities should immediately attack the problem of taxation on a local basis. As a result of this action, several communities in New England have initiated movements toward the establishment of local taxpayers' associations or other machinery for studying their tax problems.

Declaring that "the taxation situation in New England is serious and that some concerted remedial action on the part of taxpayers themselves is necessary," the letter states, in part:

"The community development committee suggests that every chamber of commerce, which has not already initiated action, call together the principal taxpayers in its community during January, 1932, for the purpose of giving definite consideration to its local tax situation. We suggest as material for discussion at such a meeting data comparing the rate of increase of local public expenditure and taxation with the increase of population and industrial activity; a statement of the major items in local public expenditure, showing in what items there have been the largest increases; and a statement of the purposes, activities and accomplishments of local taxpayers' associations.

▸ Drive for Use of Canadian Wool in Home Industry

A meeting of the Committee on Wool of the National Research Council of Canada, held at the Royal York Hotel in Toronto recently, was attended by many manufacturers and producers of wool. Reports were presented on experiments which are being carried on to develop a type of sheep suitable to range conditions in the West and possessing improved wool characteristics. The committee decided that next season 600 fleeces would be graded and classified and compared with fleeces obtained from similar strains in other countries. Most outstanding was the effect of nutrition on the wool produced especially in staple length, which is considered to be one of the critical qualities of the Canadian products. In one of the manufacturing plants an experiment using Canadian wool in making men's clothing fabrics for which other than Canadian wool was heretofore used, is in progress. Manufacturers at the meeting declared that there was disposition among them to avoid the use of Canadian wool, but they wanted to know what wool there was available and statistics were lacking. A sub-committee was appointed to secure figures showing the amount of wool available in the various classifications, and showing the imports and consumption.

▸ German Rayon Industry Slackens

Conditions in the German rayon industry developed rather unfavorably during November, according to a report received from the office of the American Commercial Attache at Berlin. While actual production showed no great change as against the previous month there was a distinct tendency towards curtailments in operations. German yarn consumers encountered considerable difficulties through the reduced purchasing power of the German population, while export trade became exceedingly difficult through high import tariffs in foreign countries.

▸ Meyer Stresses 1932 Hosiery Curtailment Need

Analyzing the 1932 prospects for the hosiery industry in a statement this week, William Meyer, president of the National Association of Hosiery & Underwear Manufacturers, and president of Apex Hosiery Co., Philadelphia, predicted "sound and material improvement" but strongly urged the mills to manufacture against orders only.

▸ Standard Hosiery Mills Forms Selling Agency

Standard Hosiery Mills, Inc., Alamance, N. C., near Burlington, have formed a selling organization to handle their production of "National Maid" full-fashioned hosiery and "White House" fancy half hose, under the firm name of Standard Hosiery Mills Sales Corp., with offices located at 271 Church St., New York. John Shoffner, president of Standard Hosiery Mills, Inc., is also president of the new corporation. Kenneth G. Russell, formerly with Scott-Barters Co. has been selected as sales manager to manage the office, which opens Jan. 12.

▸ Solves Hosiery Mill Robberies in Philadelphia

Through the efforts of the Philadelphia Textile Manufacturers' Association, the Triple-Wear Hosiery Mills, Worth & Herbert Sts., has recovered 346 dozen pairs of hosiery, valued at $2,417, which was part of a robbery of hosiery valued at $3,875.75 stolen Nov. 3. Under the direction of C. Marlin Bell, general manager, various clues were followed up and the hosiery located and recovered.

▸ Allen-A Mills Add Swimsuit Lines

The knitted outerwear industry learned with interest recently that bathing-suits will be added shortly to the hosiery and underwear lines of the Allen-A Co., of Kenosha, Wis. The bathing-suits will be made in the firm's mill at Bennington, Vt., tentative plans calling for ten styles of men's, boys', women's and misses' suits.

▸ Boston Wool Receipts

Receipts of domestic and foreign wools at Boston, also imports at Philadelphia and New York for the week ended Dec. 26, based upon data compiled by Dept. of Agriculture, follow:

	Week Ended Dec. 26	Total to Date 1931	Total to Date 1930
Domestic	151,000	255,505,000	246,535,000
Foreign	595,000	38,845,000	57,566,000
Total	746,000	294,350,000	304,101,000
IMPORTS AT PRINCIPAL PORTS			
Boston	595,000	38,845,000	57,566,000
Philadelphia	263,000	50,488,000	43,029,000
New York	135,000	52,986,000	44,560,000
Total	993,000	142,319,000	145,155,000

▸ Sulphonated Oil Makers Form Association

At a meeting held at the Hotel Pennsylvania, New York, representatives of 12 manufacturers recently completed the final organization details of the Sulphonated Oil Manufacturers' Association, a new trade body, national in scope, which is comprised of most of the leading manufacturers of sulphonated oils and their products. The following officers were elected for the first year: Charles P. Gulick, National Oil Products Co., president; Chester M. Braham, the Arkansas Co., Inc., vice-president; H. B. Sweatt, secretary and treasurer. The offices of the association will be at 55 West 42nd Street, New York, N. Y.

The association has been formed for the purpose of improving conditions both within the industry and between producers and consumers. To this end, a code of business practices will be adopted with the idea of promoting ethical methods of manufacturing and merchandising; to promote open and fair competition, and to discourage misrepresentations as to uses and qualities of sulphonated oils. Industry statistics relative to production, sales, shipments and stocks on hand will be compiled and disseminated. Tariff and railroad rate matters also will be considered.

It will also be the purpose of the Sulphonated Oil Manufacturers' Association to work with the Bureau of Standards, American Association of Textile Chemists and Colorists, the American Leather Chemists' Association, and other group organizations to simplify and standardize by nomenclature and method the various processes and measuring sticks used in buying and selling sulphonated oils.

The Sulphonated Oil Manufacturers' Association is incorporated under the laws of New York State. Among the producers affiliated with the new organization as charter members are: Atlas Refinery; Arkansas Co., Inc.; John Compbell & Co.; Consolidated Color & Chemical Co.; A. Klipstein & Co.; The Martin Dennis Co.; National Oil Products Co.; Onyx Oil & Chemical Co.; Providence Drysalters Co.; Royce Chemical Co.; Salem Oil & Grease Co.; and L. Sonneborn Sons, Inc.

▸ International Acetylene Association Holds Annual

Greatly increased interest in the continued development of oxy-acetylene welding and cutting was evidenced by the large attendance at the Thirty-Second Annual Convention of the International Acetylene Association held at the Congress Hotel, Chicago, recently. Over 1,400 engineers, architects and representatives from industrial plants, factories and technical schools attended the various sessions of the convention.

Important technical sessions were devoted to: "Transportation—Air, Rail and Motor Vehicle"; "Welded Piping—Production, Building and Overland Piping"; "Welding in the Chemical Industry"; and "Welding Education." The 1930 Morehead Medal was awarded to A. Cressy Morrison for his 25 years' service as secretary-treasurer of the association.

The following officers were unanimously elected for 1932: President, W. C. Keeley, Jr., vice-president, National Carbide Corp.; vice-president, E. J. Hayden, the Linde Air Products Co., Chicago; secretary, H. F. Reinhard, chief engineer, J. B. Colt Co., New York; and treasurer, W. C. Cotter, the Oxweld Railroad Service Co., New York.

The following directors were elected to serve for three years: G. B. Walker, vice-president, the Linde Air Products Co., New York; L. F. Loutrel, Shawinigan Products Corp., New York; and W. D. Flannery, Harris Calorific Sales Co., New York.

▸ Asks Revision of Freight Rates on Cottons and Woolens

Complete revision of freight rates on cotton and woolen goods throughout the country is sought in a complaint filed with the Interstate Commerce Commission Dec. 17 by the National Association of Cotton Manufacturers on behalf of mills located principally in New England. The complaint charges that competing manufacturers in the South and Southwest have the advantage of commodity rates on cotton and knitting factory products and woolen mill products lower than the class rates applying from New England.

The association asks that the commission prescribe reasonable and nonprejudicial rates and ratings for the future in and between eastern, southern, southwestern and western territories. The association suggests that the broad issue raised by its complaint should be consolidated for hearing in connection with the commission's investigation of tariffs filed by carriers to cancel most of the commodity rates now applying to cotton piecegoods and related articles from the South.

▸ Sees Textiles First to Recover

Belief that the textile industry would probably lead the way out of the present industrial depression was expressed by Dr. M. Leo. Gitelson, chairman of the textile section of the New York Board of Trade in a radio address, "Textiles Must Pioneer Again," which was broadcast over station WGBS, New York, Dec. 16. Dr. Gitelson said that many textile producers have exerted their utmost in giving the public the best and finest and richest of products only at a terrific sacrifice to themselves. He added that an industry which depends upon the whim of style means prosperity to one group and doom to another.

Business News

Schieren Moves Its Boston Office

The Boston office of Chas. A. Schieren Co., New York, has been removed from 727 Atlantic Avenue to a new location at 186 Lincoln street.

Fred Miick Appointed Engineer by Link-Belt

Fred Miick has recently been appointed engineer in charge of sewage treatment plant equipment sold in the Pacific Coast territory of Link-Belt Co., Pacific Division, San Francisco, Calif. He has been transferred from the Philadelphia plant of Link-Belt Co.

Harold Mahon to Represent Stein, Hall & Co. in South

Stein, Hall & Co., Inc., New York, N. Y., manufacturers of starches and other materials, announced that Harold Mahon, who has resigned as purchasing agent for Judson Mills, Greenville, S. C., effective Jan. 1, will represent them in certain southeastern states. Mr. Mahon will make his headquarters in Greenville.

Falk Corporation Announces Lower Prices on Speed Reducers

A lower schedule of prices on various types and sizes of speed reducers has been announced by the Falk Corp., Milwaukee. Falk standard speed reducers are made in single, double and triple reductions, both horizontal and vertical, for parallel shaft and right angle drives. There are 17 types in 202 sizes, ranging from 1,000 hp. down to 0.05 hp., with 133 standard ratios from 1.5:1 to 518:1.

Business Is Good with Gilmer

The L. H. Gilmer Co., Tacony, Philadelphia, Pa., manufacturers of V-belts and other types of power transmission belting, has just concluded the regular annual factory conference. Attending this meeting were over 50 men, comprising field salesmen, engineers, and department heads.

During 1931 definite progress has been made in finding increased application for Gilmer products, together with a much broader distribution. This has been due to the quality of product, coupled with intensive merchandising methods.

Automatic Transportation Co. Appoints Eastern Sales Agents

The Automatic Transportation Co., Inc., has appointed C. B. Crockett and R. L. Smith as eastern general sales agents for its complete line of electric industrial trucks, tractors and cranes. Centralized sales and engineering headquarters will be maintained in New York, with district offices at Boston, Hartford, Buffalo, Newark, Philadelphia, Pittsburgh, Washington, Baltimore and Charlotte (N. C.). Both Mr. Crockett and Mr. Smith have had wide experience in the materials handling and industrial truck fields.

QUOTATIONS

close of business, Dec. 29, 1931

Prices cover average qualities unless otherwise stated

Cotton Goods

	Dec. 29	Dec. 22	Dec. 30 1930
PRINT CLOTHS			
27 -in., 64x60, 7.60	2¼c.	2 1/16–2¼c.	3½c.
38½-in., 64x60, 5.35	3¼c.	3¼c.	5¼c.
39 -in., 68x72, 4.75	3¼c.	3¼c.	6 c.
39 -in., 72x76, 4.25	4¼c.	4¼c.	6¼c.
39 -in., 80x80, 4.00	5–5¼c.	5–5¼c.	7¼–7¼c
BROWN SHEETINGS			
36-in., 56x60, 4.00	4¼c.	4¼c.	6c.
36-in., 48x48, 3.00	4¼–4¾c.	4¼c.	6¾–6¼c.
37-in., 48x48, 4.00	3⅞–4c.	3⅞–4c.	5¾c.
PAJAMA CHECKS			
36½-in., 72x80, 4.70	4¼–4¾c.	4¾c.	6c.
36 -in., 64x60, 5.75	3¾c.	3¾c	5c.
MISCELLANEOUS			
Drills, 37-in., 3 yd..	4¼c.	4¼c.	7¼c.
Denims, 2.20	9¼c.	9¼c.	12¾c.
Tickings, 8 oz.	13 c.	13 c.	16 c.
Standard prints	7 c.	7 c.	7¼c.
Eastern staple ginghams, 27-in.	7¼c.	7¼c.	8 c.

Cotton Waste

Peeler comber	5¾ – 5¾
Peeler strips	5¼ – 5½
Sak. comber	4¾ – 5
Choice willowed fly	2¾ – 3¼
Choice willowed picker	2 – 3
Sak strips	6¼ – 7
Linters (mill run	2 – 2¼
White spooler (single)	4¼ – 4¼

Cotton Yarn

CARDED (Average Quality)

Double Carded 2c.—4c., higher according to quality

SINGLE SKEINS OR TUBES (Warp Twist)

4s to 8s	$0.13	22s	$0.16
10s	– .13½	24s	– .17
12s	– .14	26s	– .18
16s	– .14½	30s	– .19½
20s	– .15½	40s ex. qual.	– .28

TWO-PLY SKEINS AND TUBES

8s-2	$0.13½	26s-2	$0.18½
10s-2	– .13½	30s-2	19– .19½
12s-2	– .14	36s-2	– .25
14s-2	– .14½	40s-2	– .26
16s-2	– .15	40s-hi.brk.	– .30
20s-2	15½– .16	50s-2	– .35
24s-2	.17½– .18	60s-2	– .38

SINGLE WARPS

10s	$0.13½	24s	$0.17
12s	– .13½	26s	– .18
14s	– .14	30s	– .19½
16s	– .14½	40s. ex.qual.	– .28
20s	15 – .15½		

TWO-PLY WARPS

8s-2	$0.13½	24s-2	$0.17½
10s-2	.14	26s-2	– .18½
12s-2	.14½	30s-2	.19 – .20
14s-2	.15	40s-2 ordin.	– .27
16s-2	.15½	50s-2	– .35
20s-2	.15½– .16	60s-2	– .38

8s-2 and 4-ply skeins and tubes; tinged, 12; white, 13; waste, 11½

HOSIERY CONES (Frame Spun)

8s	$0.13	22s	$0.16½
10s	– .13½	24s	– .17
12s	– .14	26s	.18
14s	– .14½	30s tying	– .18½
16s	– .15	30s reg.	– .20
18s	– .15½	30s ex.qual.	21 – .22
20s	– .16	40s	– .27

COMBED PEELER (Average Quality)

TWO-PLY—(Knitting Twist) Cones

20s-2	$0.25 – .26	60s-2	$0.40 – .43
30s-2	.28 – .30	70s-2	.52 – .54
36s-2	.32 – .33	80s-2	.63 – .65
40s-2	.33 – .34	90s-2	.85 – .90
50s-2	.37 – .38	100s-2	1.03 –1.05

WARPS, SKEINS AND CONES

TWO-PLY—(Warp Twist)

20s-2	$0.26	60s-2	$0.42
30s-2	– .31	70s-2	– .55
36s-2	– .34	80s-2	– .63
40s-2	– .35	90s-2	– .93
50s-2	– .38	100s-2	–1.03

SINGLES

12s	$0.20	30s	$0.26½–0.28½
14s	– .20½	38s	– .31
16s	– .21	40s	– .32
18s	– .21½	50s	– .37
20s	– .22½	60s	.42 – .44
24s	.24½ – .25	70s	.55 – .56
28s	.26½ – .27½	80s	.65 – .66

MERCERIZED CONES—(Combed, Ungassed)

26s-2	$0.36½–0.38½	90s-2	$0.90
30s-2	.38 – .40	100s-2	1.15–1.25
36s-2	.40 – .42	120s-2	1.50–1.60
40s-2	.42 – .44	30s	.51– .52
45s-2	.42½– .44½	40s	– .56
50s-2	.45 – .47	50s	.61– .64
60s-2	.50 – .54	60s	.70– .73
70s-2	.64 – .66	70s	.80– .83
80s-2	.73 – .75	80s	.92– .96

Cotton Prices and Statistics

COTTON STATISTICAL DATA

(Fluctuations of Futures)

	Closed Dec. 24	For Week High	For Week Low	Closed Dec. 29	Net Ch'ge
January	6.27	6.29	6.17	6.39	+.12
February	6.35	6.35	6.30	6.45	+.10
March	6.45	6.47	6.33	6.52	+.07
April	6.51	6.51	6.47	6.61	+.10
May	6.63	6.63	6.49	6.70	+.07
June	6.69	6.69	6.66	6.78	+.09
July	6.82	6.84	6.67	6.88	+.06
August	6.88	6.88	6.79	6.95	+.07
September	6.95	6.95	6.79	7.03	+.08
October	7.04	7.05	6.91	7.13	+.09
November	7.11	7.11	7.05	7.20	+.09
December	7.19	7.24	7.06	7.30	+.11

SPOT FLUCTUATIONS FOR WEEK

(Middling)

	New York	New Orleans	Liverpool
Thursday, Dec. 2	6.40	6.23	5.30
Friday, Dec. 25	Holiday	Holiday	Holiday
Saturday, Dec. 26	Holiday	Holiday	Holiday
Monday, Dec. 28	6.40	6.20	5.36
Tuesday, Dec. 29	6.55	6.34	5.29

FOREIGN COTTONS

Egyptian Cotton

Alexandria Exchange, Dec. 28		Change
Jan. Sak	12.23	—0.02
Dec. Uppers	9.64	+0.21
Jan.-Feb. Shipment c. i. f. Boston (Tariff not included)		
Fully good fair Sak		11.60
Fully good fair to good Uppers		9.30

(By Anderson, Clayton & Co.)

Foreign cottons	F. O. B. New York, Cents
Peruvian Tanguis Strict Middling	17½
Peruvian Pima No. 1	16
Peruvian Moderate Rough	13
Peruvian Full Rough	17
China Tientsin No. 1	10
India Rough	7 to 9½
India Smooth	6½ to 8½

(By Bruns-Nordeman Co.)

MOVEMENT INTO SIGHT

	This Year	Last Year	Year Before Last
Week	338,000	211,000	276,000
Season	9,778,000	10,093,000	10,843,000

WORLD VISIBLE SUPPLY

	Dec. 24	One Year Ago
Interior towns and ports of U.S.*	6,822,000	5,969,000
Afloat to and at ports of Europe	1,564,000	1,967,000
Afloat to and at Ports of Orient	863,000	294,000
Total	9,249,000	8,230,00
Change during week	Increase 71,000	Increase 48,000

*Includes afloat to New York.

FORWARDINGS TO MILLS OF WORLD

	This Year Week	This Year Season	Last Year Week	Last Year Season
No. States, U.S.	30,000	371,000	19,000	379,000
So. States, U.S.	110,000	2,304,000	55,000	2,003,000
Total U.S.	140,000	2,675,000	74,000	2,382,000
Great Britain	20,000	477,000	6,000	377,000
Continent	49,000	1,318,000	53,000	1,528,000
Orient	53,000	1,137,000	25,000	504,000
Canada and other America	5,000	89,000	5,000	109,000
Total foreign countries	127,000	3,021,000	89,000	2,518,000
World total	267,000	5,696,000	163,000	4,900,000

EXPORTS FROM UNITED STATES

Total	207,000	3,817,000	103,000	3,805,000

AVERAGE PRICE JAN.-FEB., SHIPMENT HARD WESTERN COTTON

F.o.b. New England

	Middling	St. Middling
1 1/16-in.	8 – 8¼c.	8½ – 8¾c.
1⅛-in.	8¾ – 9¼c.	9¼ – 9¾c.
1 3/16-in.	9¾–10¼c.	10¼–11c.
1¼-in.	12½–13½c.	13½–14½c.

Basis on New York, March, 6.41.

SPOT FLUCTUATIONS AND STOCKS

Markets	Dec. 22	Dec. 29	Sales	This Week	Last Year
Galveston	6.20	6.40	2,172	924,982	705,976
New Orleans	6.14	6.34	12,322	847,157	781,731
Mobile	5.75	5.90	2,136	244,877	177,088
Savannah	6.02	6.22	2,682	326,012	313,913
Norfolk	6.19	6.38	53	70,172	98,462
New York	6.30	6.55	4,600	221,189	231,806
Augusta	6.00	6.19	480	136,359	134,407
Memphis	5.60	5.75	34,399	497,758	399,494
St. Louis	5.80	5.90	.....	.....	13,292
Houston	6.10	6.30	14,251	1,610,252	1,517,656
Dallas	5.65	5.90	38,348	52,886	37,489

DIFFERENCES ON AND OFF MIDDLING WHITE GRADES

	Dallas	Memphis	Montgomery	Augusta	Average
M.F	0.65†	.75†	0.75†	0.75†	0.72†
S.G.M.	.50†	.50†	.65†	.63†	.57†
G.M.	.40†	.40†	.45†	.44†	.42†
S.M.	.25†	.25†	.25†	.25†	.25†
S.L.M.	.25*	.20*	.25*	.25*	.26*
L.M.	.50*	.50*	.55*	.50*	.60*
S.G.O.**	.75*	.75*	.90*	.88*	.92*
G.O.	1.00*	1.00*	1.25*	1.25*	1.27*
YELLOW TINGED					
G.M.	0.30*	0.25*	0.30*	0.31*	0.29*
S.M.	.45*	.40*	.45*	.44*	.47*
M.**	.65*	.50*	.65*	.50*	.67*
S.L.M.	1.00*	.90*	1.00*	.88*	1.03*
L.M.	1.35*	1.40*	1.35*	1.25*	1.41*
YELLOW STAINED					
G.M.	0.65*	0.60*	0.65*	0.50*	0.68*
S.M.**	.90*	1.10*	.90*	.75*	.97*
M.**	1.35*	1.35*	1.35*	1.25*	1.42*
BLUE STAINED					
G.M.**	0.65*	0.35*	0.65*	0.50*	0.66*
S.M.**	1.00*	.85*	1.00*	.88*	1.02*
M.**	1.35*	1.10*	1.35*	1.25*	1.39*

**Grades not deliverable on contract.
*Off Middling. † On Middling

Wool

OHIO, PENNSYLVANIA AND WEST VIRGINIA
(IN GREASE)

Fine delne...	$0.24 –$0.25	¾ blood....	$0.23 –0.24
Fine clthg...	.20 – .21	½ blood....	.21 – .21½
¼ blood.....	.23 – .24		

TEXAS AND CALIFORNIA
(CLEAN BASIS)

Texas, 12 months	$0.54 –0.56
California, Northern	.46 – .48

PULLED—EASTERN (CLEAN BASIS)

A A	$0.58 –$0.60	B-Super	$0.43 –0.45
A-Super	.48 – .50	C-Super	.38 – .40

MONTANA, IDAHO AND WYOMING
(CLEAN BASIS)

Staple fine	$0.47 –0.49
Staple ½ bld.	.54 – .55
Fine and fine medium	.52 – .55
¾ blood	.48 – .50
½ blood	.41 – .43

MOHAIR—DOMESTIC

Best carding	$0.25 –0.28
Best combing	.32 – .35

MOHAIR FOREIGN (IN BOND)

Turkey fair, average	$0.17 –0.21
Cape firsts	.18 – .21

FOREIGN CLOTHING AND COMBING
(CLEAN BASIS IN BOND)

Australia:	
7s	$0.43 –0.45
64s	.36 – .38
58s-60s	.31 – .33

(IN GREASE)

Montevideo:	
58s-60s	$0.17 –0.18
56s	.16 – .17
50s	.15 – .16
Buenos Aires:	
4s, 40-44s	$0.10 –0.11
5s, 36-40s	.09 – .10

FOREIGN CARPET (GREASE BASIS IN BOND)

Aleppo washed	$0.19 –0.20
China: Combing No. 1	.12 – .13
China Filling Fleece	.11 – .12
Szechuen ass't	.12 – .13
Cordova	.09 – .10
Scotch black face (nominal)	.14 – .16
East India: Kandahar	.15 – .16
Vican'r	.19 – .20
Joria	.19 – .20

Worsted Yarns

ENGLISH SYSTEM WEAVING

2-20s 36s	$0.75
2-24s 40s	– .80
2-26s 44s	.82½ – .85
2-28s 46s	– .87½
2-30s 48s	.92½ – .95
2-32s 50s	.97½ –1.00
2-30s 64s fancy mixes	1.35 –1.37½

(Single yarns 5c. less than above)

2-36s 58s	1.05
2-40s, 60s	–1.20
2-40s, 64s	1.27½–1.32½
2-50s, 66s	1.40 –1.45
2-60s, 70s	1.82½–1.85

ENGLISH SYSTEM KNITTING

2-20s, 44s in oil	$0.70 – .72½
2-20s, 48s in oil	.72½ – .75
2-20s, 50s in oil	.75 – .80
2-20s, 56s in oil	.92½ – .95
2-20s, 60s in oil	–1.00
2-20s, 64s in oil	1.12½–1.15
1-18s, 48s dyed	.90 – .92½
1-18s, 50s dyed	.92½ – .95

(Oil yarns 17½c. less)

FRENCH SYSTEM

1-20s, 58s	.97½–1.00
1-20s, 60s	1.02½–1.05
1-18s, 64s, dyed	1.25 –1.27½
1-26s, 64s	1.07½–1.10
1-30s, 60s, Warp	1.12½–1.15
1-30s, 64s, Warp	1.15 –1.17½
2-30s, 64s, Fancy mixes	1.35 –1.37½
2-40s, 64s, Zephyrs	1.27½–1.30
1-50s, 66s	1.42½–1.47½
2-50s, 66s	1.45 –1.50
1-60s, 70s	1.75 –1.80
2-60s, 70s	1.90 –1.95

FRENCH SPUN MERINO WHITE

1-30s, 50-50-58s on cops	$0.90 – .95
1-40s, 50-50-60s on cops	1.00 –1.02½
1-40s, 50-50-64s on cops	1.02½–1.05
1-40s, 50-50-64s Australian cops	1.10 –1.15

Underwear mixes, 3 to 5c., Solid color, 35c. additional.

New York Top Futures

	Closed Dec. 22	For Week High	For Week Low	Closed Dec. 28	Net Ch'ge
December	67.50	67.50	67.50	.....	.....
January	67.50	67.80	67.50	67.80	+0.30
February	67.50	67.50	67.20	67.20	—0.30
March	67.50	67.60	67.20	67.20	—0.30
April	67.50	67.50	67.20	67.20	—0.30
May	67.50	67.50	67.20	67.20	—0.30
June	67.50	67.50	67.20	67.20	—0.30
July	67.50	67.60	67.20	67.20	—0.30
August	67.50	67.50	67.20	67.20	—0.30
September	67.50	67.50	67.20	67.20	—0.30
October	68.00	68.00	67.50	68.00	.....
November	67.50	67.50	67.20	67.20	—0.30

Tops and Noils

TOPS—BOSTON

Fine (64-66s)	$0.78 –0.79		
Half-blood (60-62s)	.72 – .75		
High ¾ blood (58s)	.67 – .69		
Aver. ¾ blood (56s)	.61 – .64		
Low ¾ blood	.58 – .60		
High ½ blood (50s)	.53 – .55		
46s S. A. and N. Z	.58 – .60		
44s S. A. and N. Z	.53 – .55		
40s S. A. and N. Z	.48 – .50		

TOPS — BRADFORD, ENG. (DEC. 24)

Fine (70s)	26 d	¾ bld. (56s)	18 d
Fine (64s)	24½d	½ bld. (50s)	13½d
½ bld. (60s)	23 d	Cross-bred (46s)	11 d

NOILS — BOSTON

Fine	$0.31 –$0.34	High ½ bld.	$0.27 –$0.28
Half-bld	.30 – .31	Low noils	.21 – .23
Aver. ¾ bld.	.27 – .29	Medium colored	.22 – .24
Fine colored	.30 – .31		

Wool Substitutes

WOOL WASTE

Lap, fine white	$0.55 – .58
Lap, fine colored	.40 – .43
Hard ends, fine white	.41 – .43
Hard ends, ¼ blood white	.30 – .32
Hard ends, fine colred	.18 – .20
Hard ends, medium colored	.13 – .15
Card, fine white	.22 – .24
Burr, fine carbonized	.23 – .25

OLD WOOLEN RAGS (GRADED FOR MFRS.)

Merinos, coarse light	$0.04½–0.05
Merinos, fine dark	.02½– .03
Merinos, fine light	.08½– .09½
Serges, blue	.04½– .05
Serges, black	.04½– .05
Serges, red	.07½– .08
Knit, white	.20 – .21
Knit, red	.08 – .08½
Knit, light hoods	.08½– .09
Worsted, light	.03½– .04
Worsted, blue	.05 – .05½
Worsted, black	.05½– .06

Silk Yarns

THROWN SILK (60 day basis)
Prices Nominal

Japan organzine, 2 thd. spec. gd. XX sk 85%	$3.25
Japan organzine, 2 thd. grand sk. 83%	3.05
Japan organzine, 2 thd. sp. crack. sk. 81%	2.90
Japan crepe, 3 thd. gd. XX bob. 83%	3.05
Japan crepe, 3 thd. sp. crack. bob. 81%	2.95
Japan grenadine, 4 thd. sp. grand singles, 87%	4.15
Japan grenadine, 3 thd. 90%	5.05
Canton crepe, 3 and 4 thd. 14/16 on bobbins	2.20
Hosiery tram, 3 thd. Japan 90%	3.90
Hosiery tram 5 thd, Japan, 85%	2.95
Hosiery tram, crack XX 78%	2.65

SPUN SILK YARNS (Terms: net 30)

40/2	$3.10	60/2	$3.45
54/2	3.30	62/1	2.35

Raw Silk

(60 Day Terms. Spot Goods)
Prices Nominal

	13/15 White	20/22 White	20/22 Yellow
Super Grand, 87%	$2.55	$2.05	$2.05
Special Grand, 85%	2.30	2.00	2.00
Grand XX, 83%	2.15	1.95	1.95
Special Crack, 81%	2.05	1.90	1.90
Crack XX, 78%	1.95	1.85	1.80
Extra Extra, 73%	1.90	....	....
Best Extra, 68%	1.85	....	....

Canton filature, new style, 14/16	$1.65
Canton filature, new style, 20/22	1.60
Tussah filature, 8 cocoon	.92

NATIONAL RAW SILK EXCHANGE

	Close Dec. 22	For the Week High	For the Week Low	Close Dec. 28	Net Ch'ge
December	1.73	1.74	1.70	....	.....
January	1.71	1.73	1.65	1.67	—.04
February	1.71	1.74	1.67	1.68	—.03
March	1.73	1.77	1.71	1.72	—.01
April	1.77	1.79	1.73	1.74	—.03
May	1.88	1.88	1.73	1.73	—.15
June	1.78	1.79	1.73	1.73	—.05
July	1.78	1.79	1.00	1.73	—.05
August	....	....	....	1.73	.....

Total number of bales, 4,720. Total approximate value, $1,255,520. Trading unit crack XX 13/15 white 78%.

Domestic Rayon

VISCOSE PROCESS

Denier	Filament	First	Second
30	8	$2.25	...
50	12-18	1.35	$1.25
75	18-30	1.20	1.10
100	18-40	1.00	.90
125	36-50	.90	.80
150	30	.72	.70
150	24-44	.75	.72
150	60	.85	.82
150	75-90	.85	.82
170	24-27	.75	.72
170	60	.85	.82
200	30-42	75	.72
300	42-62	.63	.60
450	42-72	.63	.60
600	72-96	.63	.60
900	100-144	.63	.60

NITRO-CELLULOSE PROCESS

Denier	First Qual.	Second Qual.	Denier	First Qual.	Second Qual.
75	$1.35	$1.25	150	$0.75	$0.72
100	1.05	.95	175	.75	.72
125	.95	85			

CUPRAMMONIUM PROCESS

Denier	Filament	Price	Denier	Filament	Price
15	24	$3.10	75	60	$1.30
25	24	2.85	80	60	1.30
30	24	2.60	100	75	1.10
40	30	1.70	120	90	1.00
52	30	1.50	150	112	.90
65	45	1.40	180	135	.87

ACETATE PROCESS

Denier	Price	Denier	Price
45	$1.60	125	$1.10
60	1.50	150	1.00
75	1.40	300	1.00
100	1.30		

Rayon Waste

Open bleached waste	$0.13–$0.14
Open bleached waste	.10½
Bleached thread waste (mfs.)	.09
Bleached thread waste (misc.)	.06– .07
Colored thread waste	.03– .04
Colored clips	.03– .04

CONVERTED RAYON WASTE

Bleached tops	$0.30–$0.32½
Unbleached tops	.27– .28
Bleached noils	.11
Unbleached noils	.09½
Bleached garnetts	.12
Unbleached garnetts	.13
Colored garnetts	.10– .11

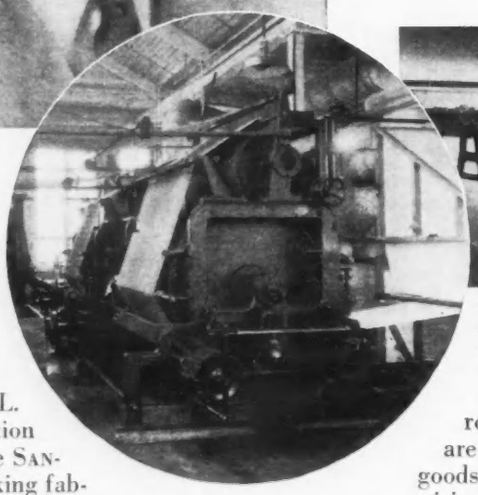
Silk Waste

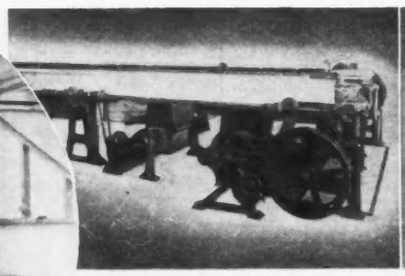
Kibizzo Kakai Grand XX	$0.50
Kibizzo Kakai Triple Extra	.44
Frison Grand Double	.49
Pierced Cocoons	.50

• *The* INVENTOR *of the* SANFORIZING PROCESS *uses* REEVES TRANSMISSIONS *exclusively* •

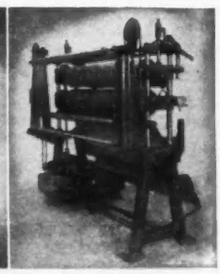
ABOVE: SANFORD L. CLUETT, inventor of SANFORIZING PROCESS (*Vice-President, Cluett, Peabody & Co., Inc., Troy, N. Y.*)

AT RIGHT: Delivery end of one of the completely REEVES-equipped Morrison Sanforizers at *Cluett, Peabody & Co.* plant.





Tenter unit of Sanforizing machine, manufactured by *Textile Finishing Machinery Co., Providence, R. I.* Standardly REEVES-equipped



Intermediate feeding rolls of Morrison Sanforizer, manufactured by *Morrison Machine Co., Paterson, N. J.* Standardly REEVES-equipped

● THE development and perfection of Mr. Sanford L. Cluett's important contribution to the textile industry—the SANFORIZING process for shrinking fabrics—has been conducted by him on machines equipped with REEVES Variable Speed Transmissions.

Here, as in innumerable other industrial processes where hair-line accuracy in flexible speed control is a basic requisite, the REEVES Transmission has been the logical selection, because of its extreme precision and unfailing dependability in service.

Until Mr. Sanford L. Cluett conceived and developed the SANFORIZING process, the shrinking of fabrics was largely a matter of guess work and uncertainty. Today, with this highly perfected process, using very accurately regulated mechanical equipment, the shrinkage is so definitely accomplished and so positively controlled that shirts and other apparel made from SANFORIZED fabrics are guaranteed for permanent fit.

At the Cluett, Peabody & Co. plant, where many millions of yards of fabric have been scientifically shrunk by this modern process, each SANFORIZING unit is equipped with two REEVES Transmissions—one driving the tenter frame and the other driving the feed rolls controlling the flow of goods to the palmer. Variations in speed of the tenter are required for various weights of fabric, and the specific degree of shrinkage desired. Variations in speed at the feed rolls, automatically actuated by a "dancer roll," are necessary to maintain a properly timed flow of goods to the palmer blanket. In each instance, extreme precision in speed regulation is vitally important.

Mr. Cluett's unqualified endorsement of the REEVES Transmission for this exacting service is exemplary of the high regard in which the REEVES Transmission is held by the most prominent and successful textile manufacturers and machinery builders. REEVES leadership in the field, and the many superior advantages built into REEVES Transmissions, are a result of years of specialized experience in correct speed-control engineering, applied to many thousands of industrial machines.

The new REEVES catalog W-32—a complete treatise on efficient speed control—embodies valuable information of special importance to textile engineers and production executives. It offers definite aid in saving production dollars by the most advanced methods of speed regulation. Write for your copy today.

REEVES PULLEY CO., COLUMBUS, INDIANA

REEVES
Variable Speed Transmission